

Apple's Mac Gets Enthusiastic Reception (p. 13)

InfoWorld

The Newsweekly for Microcomputer Users

February 20, 1984

Volume 6, Issue 8

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InfoWorld 8/82²

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Interface Age 8/83³

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InfoWorld

The Newsweekly for Microcomputer Users

Volume 6, Number 8

February 20, 1984



The Great Wall of China has "protected" China from foreign influences for centuries. But in recent years China has begun a program of modernization that promises to bring the People's Republic rapidly into the information age. Many Chinese seem to have much interest, but little familiarity, with computers. **31**



Computer books were a hot seller in bookstores this past Christmas season, especially machine-specific books. **97**



As two corporate giants square off in the Unix market, shifting alliances pay off for Digital Research, and cost Microsoft. **43**



Cover Story: Preschools nationwide are already installing computers in the classroom, while parents search for children's software. This week, *InfoWorld* investigates the positive and potentially negative effects of preschool computing. **24**

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No need to push your children

Kids under five are programming in Logo. Well-educated parents are insisting that their toilet-trained tots be enrolled in classes with computers. Child-development experts predict that within five years, you will find microcomputers in the playrooms of all the nation's preschools.

Watch out. Given how much of their own dreams Americans invest in their kids, there's a good chance parents can end up making their children feel inadequate and hopelessly illiterate. We don't need to get uptight just yet about the computer revolution passing our children by.

No, we haven't tracked down any parents who are strapping their kids in front of a computer to receive premature doses of computer-terminal eyestrain. But we are concerned that overplay of the technological revolution will cause parents to overreact to fears that their children won't mentally match up to their peers when they reach kindergarten.

Although no conclusive evidence has been gathered about the impact of microcomputers upon preschoolers, current signs are positive. By learning to use computers, their cognitive and motor skills appear to increase, and even three-year olds can learn a lot by using well-designed software. But parents can only get good results when they introduce computers to the home in the right way.

Most toys for preschoolers are purchased without careful consideration, and we worry that parents will purchase computers and software in the same way as they buy building blocks and storybooks. Parents are now being goaded by computer salespeople who show them software termed "I.Q. builders" or "essential learning tools."

Children's preschool years are the most formative ones of their lives. Their introduction to and first experience with computers will determine how they feel about them and themselves in later life.

Experts claim that computers can build up a child's self-esteem when he learns how to master a keyboard. If parents aren't careful, tots who can't understand how to work the new \$500 computer may feel as though they've wasted their parents' money, feel inferior intellectually and feel guilty that they're unable to please the family.

It's a mistake to purchase a computer just for a preschooler. The excitement of obtaining the first home computer can and should be an experience shared by parents and kids. It's been proven that the most effective learning takes place when a child is taught by someone who loves and cares for him. Parking a kid in front of a terminal is no different from leaving him in front of a television set alone.

Parents need to consider the purchase of a home computer to be the beginning of a responsibility and not the end.

Yes, the technological revolution is here. Yes, success in the future will be determined by how easily people can gain access to information.

But, if you're a parent or friend or teacher of a preschooler, remember that building blocks and storybooks are as important in a child's life as computers. You don't have to buy a computer right away. Your youngster won't lose out. And if you have a computer and your kids don't show interest, that's OK too.

The technological revolution isn't going to sweep past your child before he reaches kindergarten.

Kathy Chin

Kathy Chin

This One



ZD83-P95-CG9T

Letter from the Editor

Answers to readers' letters

BY STEWART ALSOP II

Editor

One of the best aspects of being the editor of this magazine is that you find out how much our readers care about what we do and how we do it. We get 20 or 30 letters a day, and a good number of those letters question our publishing practices rather than respond to a particular article.

Herewith are four letters that represent common concerns about *InfoWorld* that readers frequently write to us about:

"As my choice of computer is a Tandy product, I find nothing in your magazine to increase my knowledge of my product, so I will leave your magazine for the mass IBM market you're going after," writes Howard Brookins of Menomonee Falls, Wisconsin. "It's quite obvious your advertisers must feel the same way, as I could find little advertising geared to my needs between your covers. A quick check of the January 9/16 issue shows the following: 38 pages of advertising geared to the IBM user, 10 pages for the Apple user and 0 pages for the TRS-80 user like myself."

Readers write constantly that either we don't publish enough stories about Radio Shacks, Commodores, Zeniths, Osbornes, Texas Instruments, Victors and other computers, or we publish far too many stories about IBM or Apple computers. (We even get some complaints that we don't publish enough stuff about Apple or IBM.) The complaints get more precise when it comes to reviews: we only publish reviews of software for the IBM PC and Apple IIe.

InfoWorld is a news magazine that covers personal computing in general. We report news stories and review products that have the greatest appeal and interest for personal-computer users overall. Unfortunately or fortunately, depending on your point of view, IBM, IBM PC-compatible, Apple and Commodore computers now account for 60% to 70% of the personal computers sold in America. And about 80% to 90% of the software being developed today is being developed for either the Apple or the IBM first and then translated for use on other computers. We review software products when they first come out (with few exceptions), which

means that most of our reviews only cite an Apple or an IBM, even though much of that software does become available for other computers in the six months after its first introduction.

"How odd," writes James Utterback of Richfield Springs, New York. "My first subscription issue arrived on January 12 and is dated January 30. It contains two letters to the editor regarding the Dvorak column in the January 16 issue. Yet the January 16 issue didn't reach my newsstand until two days after I had received the January 30 issue."

InfoWorld is distributed three different ways: by mail to regular subscribers, through computer stores and through newsstands, each of which has a different schedule for deliveries. We are not yet a large magazine in the eyes of our distribution agents. For instance, we will mail about 95,000 copies of this issue through the U.S. Postal Service, ship about 15,000 copies to computer stores and ship another 40,000 copies to newsstand wholesalers. The Postal Service gives us excellent service (usually), delivering *InfoWorld* in two to four days, depending on where you live. We ship copies directly to computer stores, which display the magazine when they get it.

We also ship copies directly to our wholesalers, and here is where we have a problem. Most weekly magazines have much larger distribution on newsstands (*Time* and *Newsweek* each sell more than a million copies a week and *TV Guide* sells several million). Other weeklies get "prebilled," which means that their distribution isn't held up for paperwork to be completed.

With its relatively small distribution, *InfoWorld* does get held up. As a result, our newsstand distribution is a week later than our subscriber distribution. Like all magazines (including *Time* and *Newsweek*), we have to label our issues with the date that the magazine is taken off the stands and that date is about two weeks after you actually see the magazine.

In the next six to twelve months, we should represent enough business for our wholesalers to be "prebilled." No matter which distribution channel, the fact is that you're still getting the latest and most comprehensive news about personal computers from *InfoWorld*.

"Bob Payne's letter in Doug Clapp's column (Clapp-Trapp, January 30) suggests that *InfoWorld* is prepared to spotlight bugs and call a dog a dog," writes Thomas A. Crispin of Klamath Falls, Oregon, in a letter commenting on our review of Wordvision. (Crispin, by the way, is a coauthor of Wordvision.) "Well, you're getting better. I nearly cancelled my subscription due to pie-in-the-sky reviews, but lately you've taken a tougher stance. In fairness to those products reviewed under your more stringent standards, perhaps you could rereview some of the competing products."

We did recently upgrade our standards for the ratings we give products in our report cards. That means that our current ratings of products are not comparable to previous ratings. Our standards for reviewing products are constantly being reviewed and upgraded.

Since we think it's more valuable to give our readers an honest evaluation of each product on its own merits, we do not intend the reviews to be used comparatively. We are planning to commission and publish separate comparative reviews on a regular basis.

"It would be a tremendous service to your readers," writes Ron Knoblock of Bridgeport, West Virginia, "if you would incorporate in the magazine on a quarterly or semiannual basis, a set of mini-reviews recapping all recently published hardware and software reviews. Each recap could consist of the names of the vendor and product, the product's report card, and a reference to the issue of *InfoWorld* which contained the full review."

A lot of readers have asked us how we're indexed both for reviews and for other articles. We have published a semiannual review recap, which we missed for the last six months of 1983 in the midst of changing our format. In two or three weeks, we will begin publishing a weekly summary of recent reviews of the 15 or 20 most popular products. We are also planning a quarterly subject index to all articles that will be published in the magazine. We also publish a cumulative, annual index by subject matter to all articles in each calendar year (which is available for \$5.20 prepaid from *InfoWorld*, 375 Cochituate Road, Box 837, Framingham, MA 01701). ●

Dumping on Dvorak

Would someone please tell Mr. Dvorak that his boldfacing is distracting?

R. Baker
Naperville, IL

I expect Mr. Dvorak was sent to cover the Consumer Electronics Show for news for your readers (*Inside Track*, January 9/16). Instead, we get no information on the show but plenty on his after-hour activities. If I wanted to be bored, I would watch TV.

D.W. Morgan
Parsippany, NJ

The writer who objected to John Dvorak's Las Vegas column (*Letters*, January 30) must be a genuine fuddy-duddy. Dvorak's frequent displays of wit do more to humanize the computer industry than most PR campaigns. We say, keep it up, collect his columns in a book and may we all get to Vegas in a Vette on our writing and research.

One question, please: Is it "Dee-vor-ak" or "Dee-vor-zhak"?

Thanks for the good writing. We read *InfoWorld* every week from cover to cover and recommend it to our students as a primary reference.

Henry St. Maurice
Randolph, VT

Columnist Dvorak's name is pronounced "Duh-vor-ak." — Editors

Does inferior sell?

After reading article after article on the IBM Personal Computer, I have come to the conclusion that most knowledgeable people consider the PC a substandard and overpriced product. Could you explain to me how what seems to be an inferior product has captured not only a disproportionate share of the market but seems to have created a morbid fascination with the PC?

In the January 9/16 issue of *InfoWorld*, there are five articles directly related to the IBM PC or the PCjr. When IBM announced the PCjr, the media were falling all over each other to cover a "phantom" product, but when Tandy introduced the Model 2000, which appears to be one of the most exciting new products, you gave it two paragraphs.

Edward C. Knaudt
San Diego, CA

Reader Knaudt must have missed the lead news story in our December 12 issue, which covered the announcement of the Tandy Model 2000 in detail. We will also

review the Model 2000 in detail in an upcoming issue.

Who wants to know?

You reported that people are more concerned about privacy invasions by computers — 77% now worry, compared to 64% five years ago ("Poll reveals Americans see computer as friend, foe," January 9/16). There is much talk about 1984 and government as Big Brother. But I feel that private industry is much more likely to disrupt or possibly ruin a person's life than the government is.

Businesses send information to credit bureaus. What is sent and to whom? Credit bureaus send information to businesses. Again, what and to whom? I heard that there is a medical-record business in Greenwich, Connecticut. Where does it get its information from, and who does it send it to? How accurate is it?

Recently I went to open a bank account. The fine type on the application said who the bank would send information to; it wound up saying it would tell virtually any business that asked about me. It used to be that banks kept a customer's business private.

I would like to know who is saying what about me behind my back and to whom. I wrote to the Connecticut Legislature and asked them to pass a law that if a business sends out information about an individual, it must also send the individual a carbon copy of the letter or a printout of the computer information if sent by computer. That would cost the business 20¢ postage plus something for the paper used. The Legislature doesn't seem to care for my idea. I wish I knew why.

It seems only fair to let a person know what is being said about him.

Walter W. Drew
Wethersfield, CT

Programmer celebs

That the celebrity status of a programmer may have a bearing on software sales ("Programmers Become Stars," January 30) is important to me in only one aspect: does the programmer's name on a box really mean that the program is well written? Such other aspects of stardom as the size of a contract, the person's sex life, cocktail-party habits, automobile, favorite Scotch and so on have only a romantic appeal.

Whether I like it or not, maybe we will see the phenomenon of star status for programmers. Maybe kids will collect baseball cards with faces of squinty-looking guys in baggy clothes. Without belaboring the point that just such articles

as yours are the fuel that fires such stardom, here is a bucket of hindsight to throw at the issue.

The entertainment business is the place to look for the effects of stardom. Over a period of decades, we have seen the changing relationships of big distribution houses (movie-production houses, music houses, publishing houses) and their stars (movie stars, recording artists, authors) and their products (movies, records, books).

The phenomenon goes in phases. There have been eras when the companies were the most visible element, when the stars had their turn and sometimes even when the products got noticed. If programmers are paid fortunes for their skills, then we will have stars. The media (ahem) will create them. The entertainment business has seen enough swings from one end to the other that the software business can be expected to behave in a similar way.

Please, don't make it such a big deal.

Jim Stockford
San Francisco, CA

Reverse humor

'Tween the refresh of humor and southpaw keyboards ("New 80186-based micros outpace the IBM PC," January 30), you guys are gonna make me sign on for a lifetime subscription! Many thanks for a delightfully informative periodical.

Michael Fitzgerald
Kenner, LA

Reader Fitzgerald noted that we reversed the picture of the MAD-1 computer printed with the article mentioned above. — Editors

Correction

In the February 13 cover story on the Macintosh, we said that Macintosh Basic was developed by Microsoft. Actually, there are two Basics for the Macintosh: Mac Basic is an Apple product yet to be released, and Microsoft has its own Basic, which is available now. The Microsoft version of Basic does not support the concurrent tasks that Macintosh Basic does, but it can access a number of the Macintosh ROM procedures, such as creating windows and moving the mouse. Although the article stated that Microsoft's Chart program for the Macintosh is available now, it will actually be released in a few weeks.

Please write to *Letters*, *InfoWorld*, 1060 Marsh Road, Suite C-200, Menlo Park, CA 94025. Letters selected for publication will be edited for length and clarity.

What to do about Big Blue

BY DAVID KAY
Contributor

As the marketing vice-president of a company that manufactures the fourth-largest-selling personal computer, I find it disturbing to see the way in which some voices in the business press and the financial community have spoken about the "shakeout" in personal computers. They have awarded not only victory but also sole-survivor status to IBM, while questioning the viability of all other microcomputer manufacturers.

Business Week, for instance, recently proclaimed, "And the Winner is... IBM!" Articles with similar themes have appeared in several business magazines and in the financial pages of newspapers. These articles reflect a bandwagon-like infatuation with IBM that is way out of proportion to the quality of IBM's products or even its 26% market share.

Whatever the merits of the IBM Personal Computer or of IBM's corporate style, much larger issues are at stake. The press has consistently written about the new spirit of innovation, creative diversity and cost-cutting productivity that is accompanying the rapid growth of high-technology companies. What will happen to that momentum if the computer industry becomes centralized and monopolized by a handful of giant manufacturers, as was the pattern with traditional smoke-stack industries?

What happens to freedom of choice for consumers if it becomes a sellers' rather than a buyers' market, with only a few big manufacturers able to dictate what consumers can buy and at what price? Indeed, what happens to the downward trend in computer prices if IBM — "the only company able to overcharge," as one *San Francisco Chronicle* journalist put it — gains a marketplace stranglehold.

Competition, of course, is the name of the game, and IBM has as much right as anyone else to sell whatever products it wants at whatever price it deems fit. But let's not kid ourselves; the media exerts a powerful influence upon competition and upon the choices that prospective computer buyers make.

David Kay is vice-president of marketing for Kaypro Corporation, in Solana Beach, California.

It was disturbing, therefore, to see so much print expended on rumors about the IBM PCjr last year — even before the product existed. As the *Wall Street Journal* pointed out in a front-page story, this "Peanut mania" had a harmful effect upon the industry as a whole because it discouraged investor and consumer confidence in other companies that, by any objective analysis, deserve such confidence.

I believe something can be done to correct this imbalance in both the media's and the public's perceptions of our industry. I propose the formation of a new trade-information service sponsored by independent vendors. Its purpose would be to stimulate media and public discussion of the need for a healthy, diversified marketplace; it would provide a forum for those scholars and industry analysts who are already examining the social and economic implications of the trend toward monopolization in our industry.

The service's activities would be threefold:

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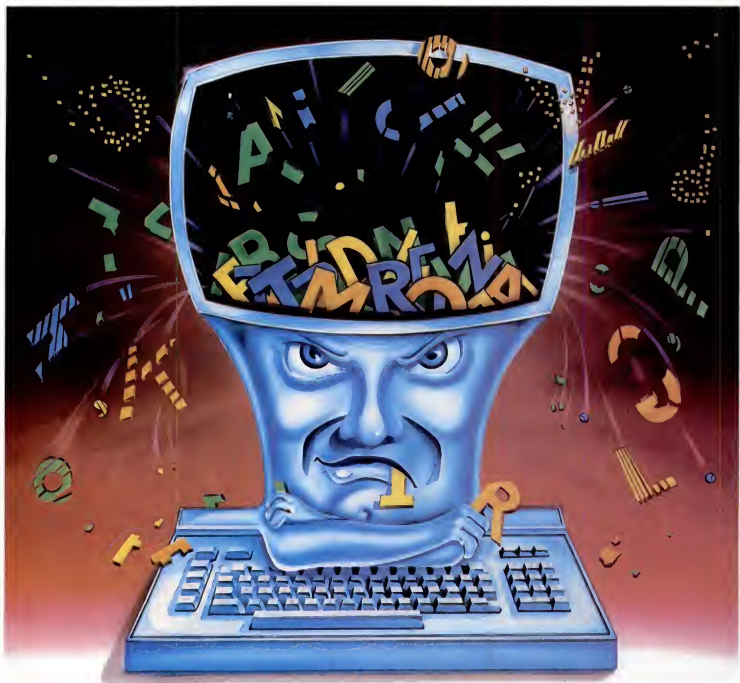
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Late Breaking News

NEWS INDEX

• Macintosh enters center stage

Apple showed off its highly touted Macintosh in a splashy multimedia event orchestrated for the benefit of Apple shareholders and the press. Several third-party firms were also on hand to announce products for the machine.

13

• IBM ships PCjr

IBM has finally shipped the PCjr to dealers, although the firm warns that initial availability would be limited. The firm also announced telephone-support service for both the PCjr and the IBM PC.

14

• Peat, Marwick picks the Mac

Peat, Marwick, Mitchell & Company, one of the biggest accounting firms in the country, has placed an order for 2,500 Macintosh computers, which the company plans to use for on-site audits. Peat, Marwick is believed to be the first major accounting firm to use microcomputers for such on-site audits.

14

• Robots to guard prisons

A Massachusetts firm says it has developed a robot designed to be used in prisons. In addition to guarding prisoners, the robot reportedly can be used on "suicide missions."

17

• Colleges order Apple's Mac

A total of 24 colleges and universities have reportedly placed orders of over \$60 million for Apple's new Macintosh computer. Students will be able to purchase Macs at a substantial discount below retail price.

17

• Shareholders miss seeing Mac

A number of Apple shareholders, including one who owns 135,000 shares, couldn't get into the firm's annual stockholders' meeting.

19

• MicroPro goes public

MicroPro, creator of the popular WordStar word-processing program, filed an initial public offering of 2.5 million shares of stock.

19

• **Visi On gets drastic price cut:** VisiCorp has announced it has cut the price of the basic software component of its highly touted Visi On software line. The Visi On Applications Manager, originally priced at \$495, has been cut to \$95 suggested retail. The reason for the price cut is that users and dealers are mainly attracted to the power of the applications, according to a spokesperson for the San Jose, California, firm. "We wanted to remove any perceived obstacle to the purchase of Visi On — it's a very competitive move on our part," she said. The price of individual Visi On applications, Visi On Word, Visi On Calc and the like, remain the same — ranging from \$250 to \$395 each. The Visi On Mouse retails for \$250. Dealers who've already purchased the Applications Manager at the higher price will get credit toward the purchase of other Visi On products, according to the company. A spokesperson said it will be up to individual dealers to give credit to customers who purchased the program, which has been out about month at the higher price.

• **Apple wins against pirates:** A district court in Taiwan sentenced executives from six computer firms to eight-month prison terms for copying Apple software. The decision marks the first time a Taiwan court has ordered jail terms for computer piracy. The six executives were convicted on charges they copied two Apple-copyrighted programs — Auto-Start ROM (read-only-memory) and Applesoft Basic. Although Apple has repeatedly appealed to the Taiwan government to stem the flow of Apple look-alike machines to the U.S., the court's decision surprised some observers since Taiwan hasn't yet enacted legislation declaring software protected by copyright law. Some of the defendants reportedly plan to appeal the decision.

• **Ovation raises \$5.5 million:** Ovation Technologies, which unveiled last fall but has yet to ship a multifunction integrated software package for the IBM PC and compatible systems, has raised \$5.5 million in funding from seven venture-capital firms. The additional funding, led by Oak Investment Partners III of Westport, Connecticut, comes on top of the \$1.3 million for research and development that the Canton, Massachusetts, firm raised to develop Ovation, a \$795 package. Ovation combines spreadsheet analysis, graphics, information-management, word-processing and communications applications into one program. The firm recently received the endorsement of Tandy, which plans to market Ovation through its Radio Shack computer stores for use on the new Tandy 2000 personal computer, which is based on Intel's powerful 80186 chip. Ovation is scheduled to begin shipping the product this spring.

David Needle, News Editor

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It's show time as Apple takes the wraps off Mac

DENISE CARUSO

Reporter

Mailgram invitations called it the "annual shareholder's meeting," but what Apple Computer really held on Tuesday, January 24, was a razzle-dazzle, multimedia exposition for the unveiling of its new baby, the Macintosh.

The Flint Center at De Anza College in

***Jobs displayed
more than his
usual lack of
modesty while
acting as emcee
for the meeting.***

Cupertino, California, was filled to capacity with nearly 3,000 shareholders and press for the Mac's debut. Video screens, showing the Mac and various Apple personnel talking about the machine, popped in and out of the ceiling above a stage decked with potted palms. Two huge speakers blasted out a recording of an Irene Cara sound-alike giving a rendition of "We are Apple — What a Feeling," which was almost identical to Car's hit song "Flashdance — What a Feeling."

Although the staff of many publications had already seen the machine and had orchestrated their coverage to coincide with Apple's release of the machine (See *InfoWorld*, February 13), the news media was in full regalia.

In addition to the announcement of the Mac and four new Lisa products, Apple's chairman, Steven Jobs, and its president, John Sculley, also introduced a university consortium comprised of 24 major American universities, and bigwigs from software and hardware companies announced product support for the new, 32-bit products.

A significant hardware-support announcement came from Martin Alpert,



Members of the Macintosh development team are all smiles after the machine was unveiled at the company's annual stockholders' meeting. From left to right: Rony Sebok, Burrell Smith, Steven Jobs, Joanna Hoffman, Mary Atkinson (wife of Bill Atkinson, at lower left) and Andy Hertzfeld.

president of Tecmar, of Cleveland, Ohio, who said that his company will be selling a removable, 5-megabyte Winchester cartridge, called Apple Jack, for the Macintosh. Alpert also announced a combination telephone/modem interface, called Apple Fritter, that uses the Mac's RS-232 port, extra serial ports and an IEEE488 port for industrial uses.

The most visible software support came from Microsoft's chairman, William Gates, who discussed the shared future of Macintosh and Microsoft. "I think it's saying something that the creators of MS-DOS are so enthused about this new machine," he said. Microsoft was the only software company that had a product ready for shipping at the time the Macintosh was released. Its advanced spreadsheet program, Multiplan, is already "in dealers' hands," according to

Gates, as is Microsoft Basic. Gates said that Microsoft will release filing, word-processing and charting programs soon.

Many other major software companies are supporting the Mac with products as well. The star-studded list includes Ashton-Tate, Digital Research, Living Videotext, Lotus Development, Software Publishing and Sorcim. Apple claims that 73 other companies already have Macintosh products in development stages.

The Macintosh had definitely arrived — kits containing information for the press weighed in at 2 lbs. 11.9 oz. and contained a Macintosh T-shirt and every tidbit of information that anyone could possibly ever want to know about Apple, Macintosh and/or Lisa. Jobs, wearing a tuxedo and a bow tie, displayed more than his usual lack of modesty while acting as emcee for the elaborate, highly theatrical



Microsoft chairman Bill Gates holds up copy of Microsoft Basic, one of several packages the firm will be offering for the Macintosh.

presentation of the Mac and the revamped "family" of 32-bit Lisa products.

Jobs wasn't the only one being theatrical. The Mac itself, when finally let out of its canvas bag, really stole the show.

A video camera displayed the crisp graphics of the black-and-white Mac monitor on a large overhead screen as Jobs put it through its paces. It spelled its name in rolling horizontal letters and showed off its superb character fonts and graphics capabilities. Jobs then let the Mac talk — and in a strong, synthetic voice, the computer cracked a few jokes and ended with a parting shot at IBM's big main-frame computers, "Never trust a computer you can't lift."

Although Apple is saying it isn't competing with IBM with its new products, Jobs couldn't resist giving his own version of recent IBM history:

"It is 1958," the chairman began sonorously. "IBM passes up the chance to buy a small company that has perfected a new method called Xerography, discounting the technology as 'unimportant.'" [The audience begins to chuckle.] Now it is 1968. IBM dismisses Digital Equipment's minicomputer as competition, saying its computers are too small to do real computing. [The audience chuckles a bit more vigorously.] Now, it is 1978. Apple Computer releases the personal computer as we know it today. IBM dismissed it as too small to do real computing. In 1981, IBM came out with its own personal computer. . . Now it's 1984. IBM wants it all! [The audience breaks into hysterical cheers and laughter.]

Whether Big Blue does end up "getting it all," this day in microcomputer history belonged to Apple. ●

IBM ships jr, announces new support services

BY JIM BARTIMO
Senior Writer

On the very day that Apple announced the Macintosh to its shareholders, IBM announced it has been shipping the PCjr to dealers since January 13. Also announced was the shipping of a dozen software products, a free service for new PCjr owners and a \$380 support service for users of the IBM Personal Computer.

IBM's announcement follows rumors that IBM had already been shipping ten units to each dealer earlier in the month. The announcement also follows the launching of a reported \$40 million ad campaign for the PCjr, which began with television ads on Super Bowl Sunday.

IBM said in its announcement that initial supplies of the PCjr and related software will be limited and may not meet expected demands.

"The delaying factor may be the Intel 8088 availability," said Jack Hart of International Data Corporation. "IBM doesn't want to build too many PCjrs because that will take away from the PC. They know what the demand is for the PC — they don't know what the demand is for the PCjr."

Dealers contacted by *Infoworld* said there were still no PCjrs available to take home. Among the dealers contacted was the IBM Product Center in Boston where sales personnel had "no idea when the PCjr will be available." According to an IBM spokesperson, "It's possible that any

units shipped are already sold out."

Another reason for dealers' ignorance of the shipment may be that IBM does not ship directly to dealers. "We've shipped through our channels such as ComputerLand's corporate warehouse. From there, the units are shipped to dealers," the IBM spokesperson said.

As expected, an outpouring of software accompanied the news of the PCjr's shipping date. Four game cartridges were released: Mouser, Scuba Venture, Mine Shaft and Crossfire. HomeWord, an easy-to-use word-processing package from Sierra On-line, PC Communications Manager for use with a modem and Home Budget jr for household accounting were

also released, according to the company.

PCjr versions of software available on the IBM PC such as EasyWriter, PFS:File and PFS:Report were shipped, along with some educational games.

In an unanticipated move, IBM also announced two customer telephone-support services. The first, the PCjr Information Center, is a hot line for questions on getting started with the PCjr and operates weekdays from 10 A.M. - 7 P.M. EST. The toll-free number is 1-800-222-7257.

The IBM Personal Computer Software Support Center for IBM PC users will charge \$380 for seven "single topic" phone calls to a toll-free number within limited geographic areas. In addition to providing technical assistance on certain software products, the pilot project will also supply a monthly newsletter. The software support center began operation the first of this month and will continue until January 31, 1985. Enrollment will be open until June 29, 1984. ●

Accounting firm orders 2,500 Macs for its auditors

BY MARGUERITE ZIENTARA
Senior Writer

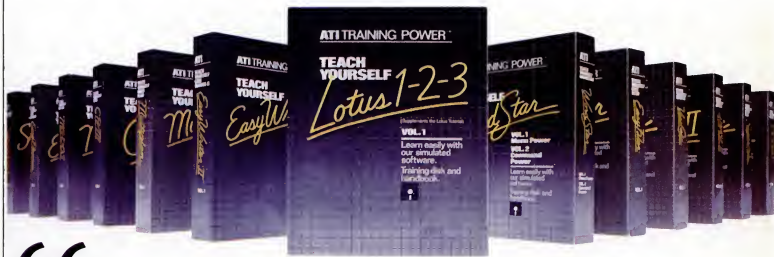
Peat, Marwick, Mitchell & Company, one of the largest accounting firms in the U.S., has ordered 2,500 Apple Macintoshes for use by its team of 7,000 staff auditors, who are based in 97 offices around the country.

By placing the order, the New York-based company will become the first major U.S. firm to use microcomputers on-site

for all its audits. Although the other major accounting firms are also on the automation bandwagon, they trail considerably in terms of volume and schedules for microcomputer use.

"Our clients expect the latest technology, and, increasingly, staff members require it," said John Collins, a Peat, Marwick partner who is in charge of audit, long-range planning and research. "It's going to result in improved productivity and better-quality audits." The company

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conducts about 18,000 separate audits per year; several may be for a single company.

As a prelude to its use of the Macintosh, Peat, Marwick's audit department has been using more than 400 Apple IIIs for the past 15 months. "We started on that basis in order to make certain we were headed down the right road in terms of the support we were given and in terms of people's comfort level with the proprietary software that we had developed," Collins said.

Furthermore, Peat, Marwick was allowed to have detailed information about the Macintosh before its recent introduction and, in fact, has been using nine of the Macs "under lock and key" for the purpose of software development for over a year.

The firm estimates that it will make a 10% time saving per audit if it replaces paper, pencil and eraser with immediately updatable and adjustable electronic data. "Now you can put account names in once, prior year's numbers in once and this year's numbers in once, and when you key in the adjustment, all the accounts that need it will be updated," said Collins.

The Macintoshes will also let the firm access information from a client's mainframe computer, by tying into Peat, Marwick's internally developed System 2190 generalized-audit software, which can be loaded onto the mainframe.

"Then we can write a program on the Mac, send the program to the mainframe, instruct it to carry out certain calculations and tests and send the results back down to the Mac," Collins explained. "In the past we would have had to go to the client's data center to do this."

Will automation lower the rising costs of auditing for customers? "We don't expect our auditing fees to actually be less than before," Collins noted, "but they will be less than they would otherwise be for expanding firms. Automation will let us spend more time on the more substantive areas of an audit."

When the company decided to automate, in the fall of 1982, it looked at about 28 types of microcomputers and rapidly narrowed its choice to IBM, Hewlett-Packard, Xerox, Direct and Apple. The company chose the Apple III solely on the strength of Apple's confidential promise of the Macintosh. "The Apple III is a nice machine, but we knew it wasn't what we wanted in very large numbers because it wasn't portable and didn't have enough speed or capacity," Collins explained.

The first half of Peat, Marwick's order is slated to be delivered on May 1, with the next 25% by July 1 and the remaining 25% by September 1. "We hope to have everyone trained by next January, which is the start of the busy tax and annual-audit season," said Collins. ●

Mobile robots scheduled for testing as prison guards

BY BARBARA WIERZBICKI

Reporter

Robots could be pulling guard duty in some of the nation's medium-security prisons by 1985. Denning Mobile Robotics of Woburn, Massachusetts, has reportedly agreed to supply Southern Steel Company, the nation's largest manufacturer of detention equipment, with about 200 robots a year for five years beginning in 1985.

Costing around \$30,000 each, the 4-foot, 200-pound mobile robots will be used to augment human guards and perform duties that are dangerous or boring, such as patrolling prison corridors at night.

The mobile robot, still in developmental stages, has a "brain" — two 32-bit microchips encased in a bulletproof cage — that lets it know if it is malfunctioning and then enables it to report back to a human guard. The automaton will be outfitted with infrared and ultrasonic sensors that can detect human odors. It can move at five miles per hour and survey 150 feet in two directions. Upon discovering a prisoner in an unauthorized area, it will declare, "You have been detected. Would you please return to your cell?"

The robot will carry no weapons but it will be able to withstand some punishment, according to Denning vice-president Ben Wellington. For instance, some robots, equipped with close-circuit television cameras and two-way radios, could be used on "suicide missions." During a



Prototype of the new prison robot with the bulletproof brain

prison riot, these robots could transmit sound and pictures "for as long as they survive," said Wellington.

The robots, slated to be field tested in September at several prison sites, have received positive reactions from prison guard unions, according to Wellington. "The move in prison design toward a more residential setting creates a potentially dangerous situation for understaffed correctional institutions," said Wellington, who believes that using robots to supplement guard duties could ensure that prisons are adequately staffed and safe. ●

Apple lines up sales of the Mac to universities

BY DENISE CARUSO

Reporter

The Apple University Consortium (AUC), which consists of 24 major American universities, expects to make homes for 50,000 Macintosh computers on its campuses by the end of 1984.

Apple claims that more than \$60 million in commitments have been made by the universities. AUC member schools are expected to each purchase \$2 million of Apple products at varying discounts over a three-year period.

The plan is for students and faculty to

use the computers for developing curriculum and new applications. Each university is required to develop instructional software on Apple computers and to meet regularly with other AUC members.

Joining the consortium gave participating universities the opportunity to purchase Macintosh computers for significantly less than the \$2,495 retail price. Apple refuses to say how much less; some sources claim dealers are already upset by the big sales to universities, believing the company is cutting into their profits.

According to Apple's president John Sculley, Apple has more than 70% of the



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kindergarten through 12th grade market. Now it may be penetrating deeply into enemy territory: IBM began tapping the college and university market some years ago. Lucrative offers are being made on both sides as the college-deal race escalates. Many universities are making deals with IBM, Apple and major computer firms such as Digital Equipment. For example, Carnegie-Mellon University (CMU) is a member of AUC and has already bought "a couple of hundred Macintoshes" from Apple, according to CMU spokesperson Don Hale. CMU also has a \$20 million contract with IBM to design and build a new microcomputer that will eventually be utilized campuswide. Hale sees no conflict of

interest in dealing with both companies.

"This is going to be a competitive situation. I think it's great, with Apple next to IBM. They're the opposite ends of the corporate spectrum. We're so early in this whole field of educational computing, it's so new, that most of your top college administrators don't want to put all their eggs in one basket," said Hale. "They don't want to bank on someone who may not develop the kind of Macintosh software that would be most effective."

By the end of the decade, CMU hopes to network 10,000 personal computers of all kinds on campus. "Lots of schools who are Apple consortium members will be here too," Hale said, referring to the Carnegie Foundation grant of \$1.06

million that funded the CMU's own group, the 15-school Interuniversity Consortium on Educational Computing.

Universities participating in AUC are: Boston College, Brigham-Young University, Brown University, Carnegie-Mellon University, City University of New York, Columbia University, Cornell University, Dartmouth College, Drexel University, Harvard University, Northwestern University, Princeton University, Reed College, Rice University, Stanford University, University of Chicago, University of Michigan, University of Notre Dame, University of Pennsylvania, University of Rochester, University of Utah, University of Washington and Yale University. ●

Overflow crowd leaves Apple shareholders outside

BY DENISE CARUSO
AND PEGGY WATT
Reporters

The Macintosh announcement was, of course, the reason why so many people came to Apple's annual stockholders' meeting in Cupertino, California. But things weren't all peaches and cream on what was meant to be the happiest of days for those involved with the product's release.

A group of shareholders representing about a million shares of stock were unable to get inside the crowded auditorium for the 10 A.M. meeting because it was filled to capacity by 9:45 A.M.

Nearly 200 people were left outside De Anza College's Flint Center, listening to the presentation on a public-address system. Despite Apple vice-president Albert Eisenstat's apologies and promise of a video repeat of the program "in the biggest place we can find," 34 stockholders signed a petition asking the Securities Exchange Commission to declare the meeting invalid.

"There's a meeting going on, and I can't get inside to cast my vote," protested Archer Johnson of Sunnyvale, California, who said he holds 100 shares of Apple.

"If you own stock, why would you fight your own company?" asked Don Spicer of Palo Alto, California. He said he was disappointed to be left outside his first shareholders' meeting but not upset enough to challenge the meeting's legality.

"We never expected a crowd like this," Eisenstat hurriedly told the milling stock-

holders.

William Gust II, an investor since Apple's days as a private company and holder of 135,000 shares, who said that he had traveled from Baltimore, Maryland, "basically, to see the Macintosh," was left standing in the sunshine. He quietly showed his business card to a surprised Eisenstat and passed it to the petitioners.

"For all I know, half the student body of De Anza College are in there," said Edward Isenberg, who gathered petition signatures from the disgruntled stockholders. "The issue is why they allowed nonstockholders in while stockholders are out here." Isenberg said he means no ill will toward Apple, but he feels stockholders have the right to express dissatisfac-

tion with being left out of the event.

Several bystanders grumbled about the press corps and the Apple employees, many of whom are stockholders, who sat inside while they stood outside.

"They should've let Woz run it. He accommodated a quarter of a million people," said Lew Melnyk of Cupertino, referring to Apple cofounder Steve Wozniak's sponsorship of the massive US Festival rock concerts, which have been held during the past two summers.

Despite the problems outside, stockholders in the auditorium conducted business that, among other things, resulted in the approval of 7 million more shares of Apple stock for sale, increasing Apple's total available stock to 12 million shares.

Apple's president, John Sculley, said that Apple had no long-term debt, a statement that he believed no other Fortune 500 company could make. The company is also increasing its advertising budget by 92% and its budget for research and development by 58%. ●

MicroPro files with SEC for initial public offering

MicroPro International of San Rafael, California, recently filed with the Securities and Exchange Commission for its initial public offering of 2.5 million shares of common stock. The company plans to sell 1.5 million shares, and shareholders will sell another 1 million to give an initial combination of 2.5 million shares of common stock, expected to be priced between \$11 and \$13 each.

The offering, expected to be made in March, is being underwritten by an international syndicate managed by Leh-

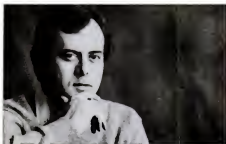
man Brothers Kuhn Loeb, Inc., E F Hutton and F. Eberstadt & Company.

MicroPro will initially use the proceeds as general working capital, according to company spokesperson Tom Hacker. It will subsequently use the funds to finance product research and development, to expand the company's domestic and international markets and, according to Hacker, to consider acquiring future products.

MicroPro, established in 1979, is a leading supplier of application software and is best known for its popular word-processing program, WordStar. ●

Clapp-Trapp

Does anyone use nets?



BY DOUG CLAPP
Contributing Editor

Random jottings: Turbo Pascal, for under \$50, seems to be for real. It's small, it's fast, it's cheap. Unlike JRT Pascal, which didn't work very well, Turbo Pascal works very well indeed; friends who know Pascal say that this one's hot. Now, when will *InfoWorld* review it?

I've received lots of letters recently railing at a comment I made to the effect that Tandy makes the worst micros. That was sloppy writing on my part; what I meant to say was that "the TRS-80 Model I was the worst micro." And yes, I did own a Model I, I'm embarrassed to admit. But my apologies to Tandy users; many of the Tandy machines are fine. Now, no more letters, alright?

Columns that people want to see: "Why don't you write about the fact that computers aren't really good for anything important?"

The magazines are full of ads for networking, right? Hard disks and lots of cables offered by lots of companies, right? So you'd think that the computer magazines are all networked up, right?

You've got to be kidding. *InfoWorld's* the only exception I know of, but they don't network micros. Instead, they've got a six-figure minicomputer, and all the staffers have terminals on their desks! The few that do have micros have to fit them in alongside the terminal, somehow. What

Doug Clapp was long ago seduced by computers and has been trying to make a living from them ever since. His work has appeared in numerous stuffy computer periodicals. If you want to correspond with Doug directly, write to the following address: 620 Stuart Avenue, Crookston, MN 56716.

happened to the microcomputer revolution? Irony strikes again.

How about the computer companies? They must be all networked together, right?

Nope. At Apple, everybody has Apples, but nobody is hooked up to anybody else. What happened to Applebus? Apple, it

**Apple is waiting
for IBM to bring
out a local-area
network and will
then conform to it.**

admits, is waiting for IBM to bring out a local-area network. Apple will then conform to the IBM scheme. A wise, humble and crafty move by Apple. John Sculley looks better all the time.

The only exception is Xerox. Xerox does this stuff right: everybody's machine is hooked into everybody else's machine.

I'm running low here. Time to call Adam Osborne, I guess. Like you, I've never called Adam Osborne.

Time passes . . .

Well, I had a nice chat, though Adam wouldn't divulge much. He would admit to being involved in a "software and venture-capital" arrangement.

More quotes: "The amount of absolutely superb software that's available from unknown sources is absolutely mind-boggling, although you have to wade through a lot of junk to find it."

And: "I didn't understand just how virgin this [software] industry was until I got into it. It's incredible how inefficient and backward some of the software is!"

According to Osborne, we have "a very terrified business environment where larger companies are scared to death" about what software to buy and how to use that software. As a result, "I've come to the conclusion that gold is lying around and somebody should start picking it up." That's the Adam Osborne we all know and

love, right?

What about the current big sellers? "When they came out they were excellent products. But the ease of use is terrible! It boggles my mind that dBase II is still so popular. If you want to change your files, it's really a pain in the butt!"

What will Osborne et al market? He wouldn't say (naturally: why announce anything in this column?), but did note that they "won't touch a piece of hardware unless it has a least a half-million installed base." That precludes CP/M machines, according to Osborne, but includes MS-DOS and Apples.

When do we find out Osborne's plans? "The West Coast Computer Faire. And now I've got to run, got a board meeting."

It was a tiring conversation. It's incredibly easy to hack up other people's products. I should know. So much for investigative reporting. Maybe you can do better.

Lotus will unveil its new 1-2-3 this month in New York, and it's going to be a killer. If you like the present 1-2-3, the new version will knock you out: full word processing, more sophisticated data-base management and more, but I promised Chris Morgan I wouldn't tell all. Let's hope that Lotus doesn't overprice the package.

Now answer this: what would you do if you headed Digital Research, a company that's being thumped and battered by Microsoft? I asked this question of a top guy at Microsoft, and the answer was surprising: "They should come to us. I think we could probably work something out."

Don't take that to mean collusion: the intent seemed to be that Microsoft was willing to consider rapprochement. Maybe even merger? God, what a powerhouse that would make! Maybe KildallGates, Inc., isn't so far-fetched? (Gates Research? MicroGiant?)

My last John Dvorak imitation (I promise): just returned from Apple's blow-out party that followed its shareholder's meeting. Good champagne, strawberries dipped in chocolate, good rock and, best of all, Susan Kare outfitted as the woman in Apple's 1984 commercial. Sexist but true. It was well worth the trip.



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News Briefs

Yes, but is it art? A month-long celebration of computers in the visual arts is just winding down. Throughout January, CADRE (Computers in Art and Design, Research and Education) brought together artists, designers and key players in the computer industry to talk about computers' impact on the arts. San Jose State University, Mission College and the West Valley Foundation in California's Silicon Valley area sponsored the conference. Many high-tech businesses and northern California art museums participated, among them the San Jose Institute of Contemporary Art, which featured a rented Apple IIe on a pedestal displaying a series of computer "paintings." Browsers pressed the space bar to cycle to the next picture. Artist Joel Slayton showed his work *Mark Face*, which was created with a special Polaroid 20 x 24-inch CRT and a special imaging camera at MIT.

Micros march into classrooms: Elementary and high schools in the United States bought \$488 million worth of microcomputer equipment in 1983. Hardware purchases accounted for \$450 million, while only \$38 million was spent on software, according to a study by Knowledge Industry Publications of White Plains, New York. According to the study, called *Microcomputer Hardware and Software in the El-Hi Market, 1983-87*, schools bought 180,000 microcomputers in 1983, bringing the cumulative total to 400,000 micros in the nation's schools. The study estimates that figure could rise to nearly 2 million by the end of 1987. More than two-thirds of all schools already have at least one desktop computer, the report says. Apple, Radio Shack and Commodore computers supplied 87% of the computers that schools purchased in 1983.

My fellow American computers: A new program called Campaign Manager that reportedly helps political candidates win elections is credited with an impressive series of victories in 1983. The \$750 program, which runs on the IBM Personal Computer and Apple II Plus, helps candidates raise campaign funds and conduct polls



Joel Slayton's Mark Face displayed at a recent CADRE conference

to determine what's on the voters' minds. In particular, the software helps aspiring politicians remember all their donors; thank their volunteers; prepare a treasurer's report in compliance with state and federal guidelines; and project their budget items, from printing bumper stickers to renting store fronts, according to the developer, Aristotle Industries in Rowayton, Connecticut. The Campaign Manager also helps candidates conduct and analyze public-opinion polls, target swing precincts and identifies ticket-splitting voters who require special attention.

Political professionals credit the software with several victories at the polls, including the upset victory of Representative Buddy Darden, who defeated the widow of the late Representative Larry McDonald. McDonald's seat was the object of a wide-open political scramble after the member of Congress was killed aboard Korean Air Lines flight 007.

According to the victor's campaign manager, John Thomas, "I chose Campaign Manager for one reason... we needed a system that had been proven in the field, and, running against nine candidates in the primary, we had to have a computer to give us the edge. In no time we had the computer raising money with letters to contributors, thanking our volunteers and planning the candidate's hectic schedule. It was as if we had a professional campaign staff of 25 seasoned political veter-

ans on our side."

Candidates for offices ranging from county sheriff to senator in all 50 states, Bermuda, Canada and the Philippines are using the program. Two of the Democratic presidential contenders are said to have put it to use in preparing for the New Hampshire primary.

Faster than a speeding bullet:

Two scientists at the California Institute of Technology in Pasadena have developed a supercomputer that can do complex scientific and engineering calculations. Based on the microprocessor technology used in personal computers and arcade games, the Cosmic Cube has about one tenth the power of a Cray 1 supercomputer, but costs only \$80,000 to build, while the Cray 1 sports a \$5 million price tag.

Geoffrey Fox, a theoretical physicist at Cal Tech, described it as 64 ordinary microprocessors wired together — something like having 64 IBM PCs working together. "Each computer uses the Intel 8086-8087 microprocessors and each has about an eighth of a megabyte of RAM," he said. Fox built the experimental machine with Charles Seitz, a computer scientist. The device is roughly 5 feet long by 8 inches high by 14 inches deep. It can do three million operations a second; the Cray 1 zips along at 20 to 80 million operations per second.

Complex scientific calculations, such as simulating global weather

patterns or charting galactic interactions, can be broken into 64 smaller calculations — one for each processor — by established mathematical methods. The parts of the problem can then be solved concurrently. "I call it a concurrent processor, not a parallel processor," Fox said. "The computers operate asynchronously, not in lockstep. The synchronization is done with software."

The inventors chose the Intel chips because of their VLSI (very-large-scale integration) design, which has made microprocessors the most cost-effective choice for computer processors, Fox said. More expensive processors are faster than 8086s, but the parallel construction and the price makes the Intel chips more than competitive.

"I explain the advantage this way," said Fox. "Suppose you have accomplished a piece of work — say you've mowed a lawn. And now you want to do 100 times as much work — you want to mow 100 lawns. The usual strategy is not to look around and find one person with 100 times the capacity to mow lawns. Normally you get 100 people to go out and mow one lawn each. You divide up the task."

A computer of this type has never been built before, partly because of the complexity of programming large parallel machines. Its developers hope to demonstrate the utility of the Cosmic Cube's design, however, and it is currently grinding away at a problem in high-energy physics.

Will the experimental machine ever become available commercially? The developers predicted something "commercially interesting quite soon" — in three to five years.

Attention photo bugs: In addition to publishing all the microcomputer news fit to print, InfoWorld would like to improve the appearance of this section with interesting, if not arresting, photos. We'd especially like candid shots of some of the movers and shakers in the microcomputer biz. Photo credits will be given. Send black-and-white prints to InfoWorld, Attention Tom Shea, 1060 Marsh Road, Suite C-200, Menlo Park, CA 94025.

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Preschool Computing: **TOO MUCH, TOO SOON?**

BY KATHY CHIN
Reporter

A new breed of tots is speaking fluent computerese. Their playthings include programmable cars, hand-held video games and paint software. During the summers, mom and dad drop them off at a preschool computer camp. And by the time kindergarten rolls around, these children are programming in Logo while the teacher is still deciphering the instruction manual.

Are we pushing our kids too hard?

Not yet, according to child-development experts, but the potential exists.

Zealous parents have come to the De Anza College Child Development Center in Cupertino, California, specifically requesting that their preschoolers be placed in a classroom with computers. "These parents tell me that because jobs are so hard to get, they want to give their kids a head start," reports Doreen Croft, director of the preschool. "There's pressure from these parents. They don't have to worry. Their kids will be exposed to computers sooner or later."

In addition to finding Johnny a preschool that uses computers, parents are also feeling pressured about which com-

puter to get for the home. Advertisements in family magazines and educational periodicals use guilt as a weapon by implying that parents will ruin their kids' future if they don't rush out immediately and buy a computer system.

Should parents buy a system just for the kids? Definitely not, say a number of experts we spoke with. Parents should purchase a computer they will use themselves. "A parent shouldn't expect to park his kid in front of the computer and have him sit there lobotomized, like he's in front of the TV," stresses Pat Dickson, child-development researcher at the University of Wisconsin in Madison.

The computer experience, especially for preschoolers, should be shared between parent and child. "Don't just leave him there," Dickson warns. "My general feeling is that if the parent isn't using a computer for himself, then he should not buy one for his preschooler. It could be a disaster, if he's not careful. The software out there isn't good enough yet."

Dickson says he would never have guessed his computer would catch the interest of Andrew, his 18-month-old son. "One day he wanted to get in my lap, and by hitting certain keys, he knew he was gobbling up the letters," says

Dickson. Within days, the adventurous tyke seemed to remember long sequences of commands, and that's when Dickson began to think seriously about the issues of preschool computing.

"Whether or not this accelerates learning, no one knows," he says. "But I've found that my kids write more if you let them fool around with the keyboard." His five-year-old son, Josh, is already writing stories with Broderbund's Bank Street Writer word-processing program. When computers are properly introduced into the home or classroom, preschoolers can use them to sharpen their eye/hand coordination, increase fine-motor skills, solidify spatial concepts such as left and right, learn logic and problem solving and be challenged to broaden and reinforce a myriad of skills.

But computers will do more than teach preschoolers what's on the screen. A child's self-esteem can be increased as a result of computer proficiency, says Dr. Dene Klinzing, director of child-development research at the University of Delaware. During a four-week computer camp at the university's preschool, students who seemed to catch on to the new technology were considered the most popular in class, according to the staff. But

it's important not to push a child before he or she is ready for computers. Parents could turn their youngsters off completely.

"Just like anything else, if the parent pushes too quickly, a child's self-esteem could be damaged because he feels he's not pleasing his parents," says Cindy Paris, one of the teachers at the summer preschool.

"Any parent should respect his child's future. The parent should give his child options," agrees Sandy Morris, another teacher at the Delaware preschool. "It's important to focus on developing a well-rounded child."

What age should a child reach before he is introduced to computers? That depends on the child and his needs, says Klinzing. "It's a matter of what's enriching. Parents can't see this as the answer for all things."

In setting up a computer station in the home where small children will be using the system, Croft advises that the computer be placed in a location where the parent can keep a steady eye on the child. The room should provide good lighting, and electrical cords should be tucked away to prevent injury. Disks should be labelled with large letters.

Croft stresses that it's not just a question of which computer to buy, but also what type of software to purchase. Finding the right software for your child's age and interests is a difficult task, and misleading promises on the software labels only add to a parent's frustration. "The descriptions on the packages promise you the world. You can't go by just reading the description," warns Croft. "There are very few programs on the market that are really educational. The children only learn how to push a button."

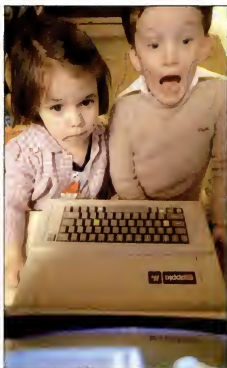
"Parents are really vulnerable to market techniques," warns Dickson. "For example, the picture of the screen that's on the package is glossier than the one on the monitor."

In addition to the problems of finding appropriate software, educators are also concerned with another issue. "What are the social effects of computers upon young children? Will America be developing a swarm of technical isolates?" asks Seymour Pappert. A professor of mathematics and education at the Massachusetts Institute of Technology, he warns that overexposure to computers can alter a child's relationship with others. "Some get so involved with computers that they almost get addicted to them," said Pappert in a recent edition of the *Boston Sunday Herald* newspaper.

Bob Lawler, an educational researcher at MIT, showed his children how to program in Logo when they were as young as three years old. Although Lawler agrees with Pappert's concern, he notes that "monomania of anything isn't appro-

priate." Most researchers claim it's the adults, the insomniacs staying up late at night debugging programs and working on new software applications, who should be restrained.

Families should have definite goals in mind when they introduce their children to computers, say child-development experts. Bob Lawler found the best method



Preschoolers at the De Anza College Child Development Center in Cupertino, California

of instruction for his kids was working in the Logo programming language. "Using Logo, parents can use the computer to play with their children. You can create simple procedures. And you can teach your kids to understand they can be in control of this technology," he says.

In some respects the microcomputer in the 1980s represents what the telephone did in the 1870s. Everyone yearns to have one. However, suburbia's prestige symbol isn't impressing preschoolers much more than a new building-block set or coloring book.

"Before we got the micro, a lot of the kids had never even heard of a computer," says Nellie Muhlstein, a teacher at the De Anza preschool. When the school first obtained the computer, the children couldn't wait to get their hands on the keyboard. "The kids loved the immediate reaction they got when they pressed a key," she says.

But now, after becoming accustomed to having a computer in the classroom, the lines to use the paint easel are longer than the ones at the Apple IIe. The computer is simply another teaching tool at the center, and the teachers don't mind if the kids don't show the enthusiasm they did

before. "We just let it happen," says Muhlstein.

Parents and researchers who are using microcomputers with preschoolers give testimony that computers encourage social interaction among youngsters, not alienation.

"A lot of friendships have been established at the computer that would not have been developed otherwise," says teacher Jackie Shannon. Shannon works at the Bing School of Stanford, which is supported by Stanford University. Bing teachers have discovered that computers have been positive in building relationships between preschool peers. "Just last week, three little boys became friends and that extended to the play yard," Shannon says.

Larry Archer, of Coarsegold, California, discovered that his four-year-old daughter, Corie, developed a renewed interest in books as a result of using computers at home. "She's looking at her alphabet books to match what's on the screen. She's also recognizing numbers. There haven't been any negative effects."

The social interaction that the computer software creates among a group of youngsters is a richer experience than using the software itself, notes Pat Dickson. "Kids as young as three or four find a lot of interesting things to say to each other at the computer."

"One little boy who was always in trouble changed suddenly when he started using the computer," says Cindy Paris. "It changed our whole perception of him. He became more patient in front of the computer, and the other kids sort of looked up to him."

In the home, says Paris, the youngest member of the family can gain self-confidence through computer knowledge. Teachers at the Bing School say that children who are allowed to feel in control of the computer are the ones who gain personal satisfaction and success. By learning how to boot up a computer, load the drive and manipulate the arrow keys, children achieve a sense of power.

But to date, not enough research has been conducted to enable us to understand to what extent the computer can be used as a tool to build developmental and cognitive skills in preschoolers. Does a computer really speed learning? How much of an effect can it have on social interaction? What are the negative effects of preschool computing?

In April, the University of Delaware will host a national conference entitled "Computers and Young Children" to address these unresolved issues.

Teachers and administrators in preschool and early childhood education are hoping to come together to share information and determine the appropriate role of the computer in the preschool classroom



MICHAEL GARY PACIFIC HORIZONS

Parents and researchers who are using microcomputers with preschoolers say that computers encourage social interaction among youngsters, and sometimes the child who is most knowledgeable about computers will be the most popular in the class.

and at home. Although computer exposure is not vital to preschoolers now, University of Delaware childhood-development coordinator Alice Eyman notes that as software becomes more sophisticated and as the prices of computers plummet further, computer know-how could become more significant. It won't be unusual, for example, for some children

entering preschools to start school with some degree of computer knowledge.

But in the meantime, until conclusions about computers and preschoolers are solid, experts maintain that parents shouldn't worry, shouldn't rush and shouldn't push. "Computers have no more importance than blocks or watercolors," says Klinzing. ●

In the school room 'A' is for Access

By Kathy Chin
Reporter

Wanna play computer?" asks five-year-old Renee.

"Uh-huh," responds Katie, a scruffy-faced four-year-old wearing glasses.

"Have you played this game before?"

"Unh-uh," she replies, shaking her head of tangled blond curls.

"Okay. I'll teach you," Renee says, pulling up a pint-size plastic chair for her pupil.

The Bing School of Stanford University has been using microcomputers in the classroom since 1981. The internationally recognized preschool in Stanford, California, has been heralded for its pioneering efforts in early childhood teaching techniques.

So far, teachers and graduate students have discovered that kids love computers

and that, if it is harnessed correctly, this technology can increase children's self-esteem and social interaction, as well as their cognitive and motor skills.

Here in the Bing classroom, about 12 youngsters scurry hurriedly from one activity to another. On the left side of the room, small hands clutch paintbrushes; and on the right, small fingers execute keyboard commands.

The group of four that was glued to the IBM PC monitor has dwindled to one. Renee, the class computer expert, is completing the puzzle in Gertrude's Secrets, a game that teaches colors and shapes. "This is a *very* hard game," she stresses. After she moves the last shape into its proper place on the puzzle, the screen flashes a rainbow of colors — a visual reward for a job well done. "Now look," Renee exclaims, pointing to the screen. "It's blinking!"

Bing was one of the first preschools in

the country to implement computers in its daily classroom activities. Currently, 58 out of 830 Kindercare centers are introducing tots to monitors and keyboards.

The National Association of Child Care Management in Washington, D.C., reports that less than 25% of the 20,000 licensed preschools are using micros. Those figures don't include the numerous nursery schools operated by universities, churches and the federal government. In five years, all nursery schools will have access to classroom computers, predicts Pat Dickson, a professor and preschool teacher of the University of Wisconsin child-development department. Several nursery classes are currently the sites for experimental computer curricula.

Last summer, staff at the University of Delaware child-development-department nursery school were curious to find out whether or not computers were appropriate in the preschool classroom. And if they were, teachers needed to know how to best implement them. The department decided to hold a four-week experimental computer camp. The children who signed up were divided into two groups, each of which attended a daily 1½-hour session. Approximately 15-20 children participated in each section. Toys included programmable cars, electronic musical instruments, electric typewriters, microwave ovens and hand-held video games. An Atari 800, Apple II and Plato terminal with a touch screen topped off the glut of high-tech devices.

The result of the camp? Parents and kids were so enthusiastic they asked for an encore. The high-tech nursery camp is nearly booked up for this summer. "Now



MICHAEL GARY PACIFIC HORIZONS

Preschoolers using a microcomputer

the purpose of the camp wasn't intended for the kids to become programmers," says Dr. Dene Klinzing, director of the child-development center. "We wanted to give them exposure. Children learned to do things we didn't think were possible for them to do."

During the four weeks, the youngsters, ages four to six, were taught how to turn on the computer, insert disks and use the arrow keys and joysticks. Although most people wouldn't think of allowing a child to handle anything as fragile as a floppy disk, Klinzing reports that all the children treated the software programs with unusually high respect. None of the disks were damaged.

Before buying any programs, the team of teachers scrutinized the preschool software and found that the majority of programs were cluttered with bugs or featured banal teaching methods. "A lot of material on the software was rote memorization," says Klinzing. "It was simply a ditto sheet on the screen." The teachers chose software that was interactive and featured excellent graphics with little text, so the preschoolers wouldn't get frustrated.

Children quickly absorbed computer jargon. "The kids really got off on the term *executing commands*," says teacher Sandy Morris. "When my son came home he told me, 'Mommy, don't tell me to clean up my room; *command* me to do it!'"

"I didn't hear any kids ask each other if they had any 80-column cards, but they learned terms like *return*, *escape*, *exit*, *input* and *boot up*," adds Klinzing.

Not everything in the camp is focused on computers. The role of a preschool is to prepare youngsters for grade school by cultivating their physical, emotional and social capabilities, say educators.

When the nursery school started the computer camp, teachers feared the computer would stifle a child's social skills. "We found quite the opposite," says Klinzing. "A child who was using a paint program would ask his classmates for help." She observed that sometimes the most knowledgeable child would be the most popular in class.

All the children showed initial interest in computers during the camp. Naturally, some become more engrossed than others. The notion that little boys like computers more than little girls do is not true in regard to the preschool set. At the De Anza College Child Development Center in Cupertino, California, Hope LaJeunesse is determined to devote her attention to the computer.

"Okay now, Hope. Let Josh sit at the computer," says teacher Nellie Mulhstein, gently tugging Hope's sleeve.

Four-year-old Hope bursts out in tears and pulls back angrily. "No, I won't. That's not fair. He already got two turns. I want mine. Wah! That's not fair!"

"All right. You can have one more turn."

The De Anza preschool has had it's Apple IIe computer less than six months. Director Doreen Croft says that buying a computer seemed natural, especially since the school is situated in the midst of Silicon Valley. "We want to be aware and want our children to be knowledgeable in premath and prereading skills," she says.

In the future, Croft predicts, success will depend on how well you can access information.

The computer is very good for developing patience, notes Croft. Mulstein says that for some children, the attention span is longer on the computer than other toys.

People at the preschool claim that a computer will enhance underlying abilities such as directionality and sequencing. "Those are the things parents don't think about," says Croft. Other hidden skills are also stirred. For instance, by having to hunt and peck at the keyboard, children are developing their eye-hand coordination. Games that require two players force children to practice cooperation.

Does a computer belong in the classroom setting? "Yes, if the software is appropriate," says Cindy Paris, a teacher at the University of Delaware preschool camp. "Yes, if the teacher is comfortable." And yes, chime in child-development researchers, if the computer is treated like any other learning tool. ●

How to pick software for preschoolers

Choosing the right programs for preschoolers is especially vital since this will most likely be their first exposure to computers. An inappropriate selection may leave such a bad impression that your children are turned off completely. The following guidelines were elicited from parents and teachers who have learned from experience how to avoid getting ripped off.

Is it interactive? Drill-and-practice programs don't teach concepts to preschoolers. The child only learns how to hit keys on a keyboard. Programs that require young users to respond to the screen will hold their attention longer. Preschoolers should be active participants in the experience. Don't forget the use of peripherals such as KoalaPads or joysticks.

Is it complicated? If unnecessary words clutter the screen, 50 pages of documentation come with the software, and it takes longer than 5 minutes to explain how to use it, you can bet your 4-year-old will opt for the fingerprints.

Does it address your child's skill level? If you select a well-written program that goes beyond your son's or daughter's ability, your child may become frustrated and feel incompetent. Determine specifically what you want your child to accomplish.

Does it offer a variety of choices? A simple and easy menu of choices allows children freedom and control. Nothing is more aggravating to a preschooler than to feel as though he's being forced to do something.

Is it fast? If a child has to wait seven seconds before the computer responds to a keystroke, he will squirm around in his chair and lose interest. Beware of cassette-tape software — it's

the slowest around.

What is the quality of the graphics? Most educators say that young children respond favorably to bright colors and pictures. Objects should be sharply focused and easily recognized.

Does it make use of sensory characteristics? A program with sound and color, and which takes advantage of peripherals such as a KoalaPad or a joystick, is much more interesting to children.

What is the nature of the program? Is it a game? Does it foster competition? Will it be too stressful for your child? Is it violent?

What is its objective? Make sure the program accomplishes what it promises to do. Does the program aim to teach a new skill or impart information? Parents should not necessarily believe everything they read. Give it the acid test.

Is it technically sound? The best way to find out is to press the wrong keys to see how well it handles errors. One ill-conceived software program is written so that the space bar is the Erase key.

Is it interesting? A well-thought-out product will keep a child's attention after repeated use. It will offer various skill levels to continually challenge his thinking. The best programs are designed with play in mind.

Is it success oriented? One educator discarded a program that added a sad face to the screen each time the child was wrong. Look for software that will build up a child's self-esteem, not tear it down.



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TINA NEWELL/JOHNSON COMPANY

PORTABLE COMPUTING IN CHINA

BY ALEXANDER BESHER

Contributor

The rain danced on the runway tarmac as I stepped off the plane. At the bottom of the ramp stood an armed People's Liberation Army soldier. Around him the CAAC (Civil Aviation Administration of China) ground crew, dressed in gray and blue baggies, scampered beneath the belly of the 747.

Flight 986 had just landed in Shanghai after a 13-hour nonstop journey from San Francisco.

I made sure my shoulder bag was tightly zipped up. I didn't want the rain to

Alexander Beshar is a free-lance writer who visited the People's Republic of China last fall. He is currently in Hong Kong on a special assignment for InfoWorld. His report will appear in an upcoming issue.

soak my NEC (Nippon Electric Company) PC 8201 portable computer, which I would be carrying with me throughout my two-and-a-half-week sojourn in China.

I was traveling with a Japanese model of the NEC, which features 58 Japanese characters in addition to the English alphabet. The American model had just become available when I left the U.S.

My flight bag also held a battery-powered NEC PC 8221 thermal printer that produces 40 characters per column, a NEC expansion cartridge that would add 38K random-access memory (RAM) to my basic 16K RAM memory, a cassette recorder and computer cassettes. I hoped my eight spare AA batteries would last through my travels. I would have to rely on the batteries since I hadn't been able to get a proper cable to connect my NEC PC to an AC adaptor.

Little was I to know that I'd be going

through batteries like so many egg rolls. Chinese Zebra-brand 1.5-volt batteries cost only around 20 fen, or about 10 cents apiece in American currency.

I stuffed a NEC users' manual in a side-pocket of my flight bag. Total weight of all my computer gear — a mere 14 pounds.

When I settled into my seat aboard the CAAC jumbo jet, I brought out the little NEC and placed it on my table. My companion in the next seat, a Chinese gentleman in a gray Mao suit, cast a curious eye at the proceedings. He was especially fascinated to see the Japanese text I was rattling off, until I managed to locate the English-language key and shift back to my native dialect.

My assignment in China was to road test the NEC and to report on the state of computing in a nation that is anxious to enter the information age but is woefully behind the West in spreading the neces-

sary technology to its people. I was probably one of the first people to carry a portable computer through China.

Now, as I made my way to the green-fluorescent-lit terminal building, I wondered about the first challenge to the NEC. Would it be waved through the Defense Board Inspection Bureau without any problem? Or would it be scrutinized with suspicion and labeled as dangerous?

Friends and colleagues gave me all kinds of worrisome advice before I embarked. "A single chip could power a guided missile," I was warned by a friend. "You had better check with the State Department before you take the NEC in." This was an absurd concern, I thought, in light of President Reagan's recent approval of high-tech exchanges with China. But still I called U.S. Customs before I left and was advised to register the machine, along with my Seiko watch, at the airport so I wouldn't have to pay any duty when I reentered the U.S. The People's Republic of China (PRC) consul general advised me to register the equipment in Shanghai. The official didn't want it remaining behind after I had left the country.

At the Frontier Defense Board Inspection Bureau checkpoint, a throng of officials returning from their missions in the U.S. were lugging boxes filled with electronic treasures — color television sets, portable tape players and, judging by the dimensions, small refrigerators. The Frontier Inspection woman in her floppy green PRC cap glanced at my itemized list of goods. She quizzically studied my entry for a "NEC PC 8201 portable computer." "Is that something like a camera?" she asked. "Absolutely," I replied. She stamped my form and waved me in.

The airport doors swung open upon a pungent Shanghai. The headlights of a car blinded me for a moment. The driver propelled the car over the sidewalk and right up to the doorway as the crowd obediently made way. It was a 1983 Toyota Corolla, and it was meant for me. I climbed in.

The driver took me to the Shanghai Hotel. In my spic-and-span room, I pulled the NEC out of my shoulder bag and slipped it out of its case like a bar of chocolate from its wrapping. A proletarian little portable, the NEC is second-cousin to the Radio Shack Model 100. In fact, both machines were designed by Microsoft and manufactured by Kyocera Ltd. in Kyoto, Japan.

The NEC PC 8201 is the closest thing

to a truly portable 64K RAM computer that I have seen. It is petite enough to slip into an 11½ × 8¼ × 2½-inch slipcase. It weighs in at just under four pounds, not quite the size of most so-called portables.

The basic NEC unit is priced at \$799 and comes with a 16K RAM and 32K read-only memory (ROM), compared to the Model 100's 8K RAM/32K ROM, which sells for the same price. Like the Model 100, the NEC's RAM can be expanded internally up to 32K in 8K increments.

The NEC itself is powered by four AA



The author, Alexander Beshar, receives some assistance with the NEC portable computer from a Chinese acupunctureist.

batteries (AC adapter optional) that are good for eight hours of solid use. Alkali batteries are supposed to keep the NEC going for 18 hours. When batteries start to run low, a red warning light goes on.

A memory-protection switch provides the RAM with power when the computer is switched off. An automatic power off function will turn off the machine if you have not pressed a key for ten minutes. That's happened enough times for me to appreciate this feature.

The NEC has an 8-line, 40-column LCD display. A contrast switch makes the 240 × 64 dot-reverse display present characters readable at any angle. You can use both uppercase and lowercase letters or use the Caps key to lock into uppercase.

With all its advanced technology, the NEC PC 8201 is among the first of the new wave of portable Japanese computers to hit the American market. It's like a peek at the future, when lap-size workstations will be the link between the computer in the office and the one at home.

The computer revolution has caught on in China. Under the "Four Modernization Drives," the People's Republic of China has been importing an increasing number of computers from both the United States

and Japan. To date, the Chinese have installed over 500 foreign mainframes and minicomputers in parts of the Middle Kingdom. And this is really just the tip of the pagoda. In 1983 alone, China imported more than \$200 million worth of computers. The market is slowly but surely gaining momentum.

But China's not only importing computer technology. In just the past year, China has begun to develop its own hardware and software.

In a recent advertisement in *China Computerworld* for its new microcomputer power source, the Harbin Research Institute of Electronic Components assured potential customers, "We reverently observe contracts and make immediate delivery." If that's true, the Chinese may be pulling ahead of some American firms, with their elusive inventories.

The following events are typical of the recent developments in the Chinese computer industry:

Anhui Province is setting up a provincewide network for communications and scheduling production in the provincial industries.

The North Jiao Tong University, in conjunction with the Soybean Research Institute in Jilin, has developed a soybean-varieties data base.

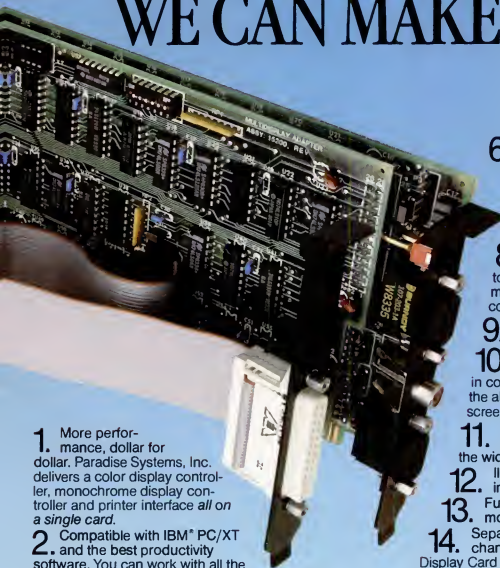
The Jiangsu Research Institute of Traditional Chinese Medicine and the General Hospital of Nanjing Military District have jointly developed a computer retrieval system for the ancient classics of

***China is not
only importing
computers but
has also begun
to develop its
own technology.***

traditional Chinese medicine. The system resides in a Chinese-made DJS100 mini-computer and is supported by a Chinese-developed data-base-management-system network.

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has been developed in Shanghai.

I pondered the cyclical nature of Chinese civilization as I ran off some text on my NEC thermal dot-matrix printer in a hotel room.

My Chinese guide was with me, watching spellbound as the paper filled up with tiny print.

"It's all in the memory of the computer," I explained to him.

"Memory?" Mr. Chu raised his eyebrows.

"Yes. And the secret is not how much memory this computer has, but how much of it is actually usable. For example, the operating system of this NEC PC 8201 needs 4,100 bytes to operate, which leaves you with 28,689 bytes that you can use. But then, when you're down to your last 192 bytes, the computer suddenly refuses to perform any important func-

The People's Security Officer wasn't buying any of my explanations as to why the NEC should be spared the X-ray treatment it rightfully deserved. Even my Chinese guide was pretending he didn't know me.

"The X rays will destroy the brain of this machine," I explained to no avail. Although it hasn't been proven that X-raying a computer will erase stored memory, I wasn't willing to take the chance.

The thin-lipped, hard-faced People's Security Officer issued an ultimatum. The X ray for the NEC, or it would have to travel with the luggage. Sure. The NEC would make a fine sauce for my mandarin fish when I poured it out in the baggage-claim area in Zhengzhou. I stood firm.

The line of passengers behind me began to fidget. Even the X-ray crew

visited the Great Wall.

The next evening I sat in the bustling lobby of Beijing's luxurious Jianguo Hotel. The lobby was filled with cosmopolitan riffraff — diplomats, speculators, adventurers, oil people and not a few beautiful young women from Southeast Asia dressed in the latest Hong Kong *Flashdance* fashions.

Throughout the evening, Chinese elites arrived in Red Flag limousines for dinner with their Western guests. A Jianguo page boy wandered about the lobby tinkling a little bell and holding his blackboard message aloft. A Chinese pianist played Rick's tune on the grand piano in the corner — "a kiss is just a kiss, a sigh is just a sigh..." As the latter day Sidney Greenstreets and Peter Lorres shuffled through their copies of the *China Daily*, I typed away at the NEC like an intruder from the next century.

I felt more in my element when I attended the first-ever Chinese-character-processor show in one of the exhibition halls of the Old Imperial Palace.

The Beijing Laboring People's Palace, which housed the show, was buzzing with computer students and eager techies. A color-graphics monitor beamed the image of a panda, all in pink. A printer rattled off a Ming Dynasty prescription for liver disease.

The highlight of the show was the HCP Chinese Information Processing System. This all-purpose tool edits Chinese texts as well as performing office automation, industrial management, press and publication, telecommunications management and communications tasks. The HCP can be used independently or as a subsystem. It has a block structural code and a general-purpose keyboard for Chinese-character entry. The Chinese-character pattern generator stores 8,000 characters on a floppy disk. The disk drive takes two 8-inch or two 5-inch double-sided and double-density disks that can store 2.4 megabytes or 780K. The Chinese-character patterns cover all the 6,763 characters fixed in the national standard code. The 12-inch CRT can display up to 1,024 characters. Software available includes CCDOS (Chinese Character Disk Operating System), Basic, Fortran IV, Pascal, Editor, Chinese text editor, a Chinese report-processing package, a Chinese date-file-management system and a CP/M-compatible Chinese-English operating system.

As I left the exhibition hall and walked through the seemingly endless courtyards of the palace grounds, I felt that the Chinese had certainly succeeded in getting a firm grasp on the keyboard of the future. What the future will compute for China, however, will be just as mysterious then as the present is today. ●

The People's Security Officer wasn't buying any of my explanations as to why the NEC should be spared the X-ray treatment it rightfully deserved.

tions like printing, saving or transmitting files. However, if you've got 193 bytes remaining, you can still do all those things. Just one byte difference, that's all. Where's the sense in that? But that's the problem of memory for you."

"Ah, why didn't you say so?" said Mr. Chu, brightening up as he got the picture.

The transition from ancient to modern technology gets lost in the subtleties of translation. The Chinese will eventually assimilate everything anyway, but they'll do it in their own manner. The peasants will still be around 150 years from now.

On an earlier visit to China, in a facetious frame of mind, I predicted that the first Chinese hotel to boast a revolving restaurant would probably find it easier to revolve the entire country around the hotel. How mistaken I was. The Jingling Hotel in Nanjing is not only China's tallest building at 36 stories, but also its most luxurious establishment, with miles of white marble, acres of thick Chinese rugs and the scent of incense in the washrooms. The cocktail lounge on the top floor was in a state of constant revolution — one per hour, to be exact. The Purple Mountain appeared like clockwork in the east as long as my diphria held out.

The euphoria induced by the hotel bar did not last. I should have consulted my astrologer before setting off for Nanjing Airport and the next stage of my journey.

poked their heads out of their cubicles to see what the commotion was all about. They were wearing green goggles and their heads were bathed in a luminous green light.

The roar of the arriving Ilyushin twin-prop plane from Shanghai broke the spell. The security man sighed, no doubt calculating the potential risk. How far could the crazy foreigner get in this rattletrap samovar with wings — a plane that could barely bounce over the rice paddies to Henan Province? He held the NEC up to his ear one last time as if it were a seashell, shook it, frowned and waved me in.

At the railway station in Luoyang, an ancient dynastic capital and modern industrial netherworld, I was waiting for my train to arrive and carry me to Beijing. The only other foreign gentleman in the first-class waiting room was a German businessman.

To pass the time and entertain my own guides, I brought out the NEC and proceeded to print a few files. This always broke the ice for me when I traveled.

As soon as the German industrialist went off to the restroom, his retinue of translators, guides and hosts scampered over to my end of the room to inspect the NEC. I think I was more popular at that moment than Bob Hope and the "Sesame Street" cast put together when they

Wizard of Menlo Park

BY TOM SHEA

Reporter

The original Wizard of Menlo Park (New Jersey) was Thomas Alva Edison, who knew a lot about light bulbs, record players, movie projectors and a host of other gadgets. *InfoWorld's* modern Wizard of Menlo Park (California) knows about using microcomputers. Send your questions to The Wiz, *InfoWorld*, 1060 Marsh Road, Suite C-200, Menlo Park, CA 94025.

Wiz,

Would you explain the difference between a surge protector and a line filter? I have an Epson QX-10 plugged into a Lemon surge protector, and I was wondering if that is enough protection?

Harold Jack
Pittsburg, CA

Harold,

Good question. Line protection seems like a simple matter, but it can be a complicated business. The short answer is that you're probably okay with a Lemon surge protector for your personal computer.

To people who are used to big computer systems, a surge protector is the lowest level of line protection. These devices, which range in price from \$10 to \$100, protect only against voltage spikes. For the standard, 60-cycle, 120-volt house current that you'd plug your home computer into, a surge protector would start to work at 144 volts and reach its maximum clamping at 288 volts. Usually, the guts of these devices consist of a metal-oxide varistor (MOV), which provides a parallel path to ground along which excess voltage is shunted.

Although spikes are only one kind of noise on the line, they are the most dangerous and have the potential of burning out the power supply on your computer or peripherals. Here is the strange thing: excess voltage may or may not be a problem in the area in which you do your computing. Neighbors who turn on and off heavy electric motors (or the motors in your own air conditioner, lawn mower or refrigerator) may cause spikes. In industrial parks, welding shops or conveyor belts in the neighborhood can

create spikes. Power leaves the power generating stations "clean," but it can pick up voltage variations in local neighborhoods from the occurrences described above.

The average person has no way of knowing whether his power source is clean or dirty. Technicians, who know how to deal with the potentially fatal voltages involved, can go across the line and either listen for clicks and pops above the 60-cycle hum or can analyze the voltage from looking at the waveform. This is not recommended practice for the layman! If, however, the lights in your home dim from time to time, or if you can see or hear glitches on the TV or stereo, it's a sign you may have a problem.

If the area you live or work in is subject to voltage spikes, your computer may still be all right, though you're taking a chance. The power supplies of most personal computers offer some protection from spikes, but often computer peripherals are not protected. If you keep frying disk drives, I recommend you get at least a surge protector.

A line filter is the next higher level of protection. Line filters protect against overvoltage, undervoltage and noise on the line. Noise can come from fluorescent lights or dimmer switches in the home or office. Line filters cost about \$10 to \$15 more than a surge protector. Noise usually won't cause damage to the computer, but it can cause your computer to lose data, which is bad enough.

Companies using big computer systems in electrically noisy areas have had to resort to any of a number of solutions to clean up the power source: isolation transformers help; if that doesn't do it, a regulator that compensates for voltage variations or even a motor-generator is required.

As one reader correctly points out, MOVs have the disadvantage that they decrease in effectiveness every time they suppress a surge. There's no sure way to tell when one has become ineffective, either, short of putting it up on a test bench. Engineering charts list the life expectancy of MOVs. An "L" series MOV, which could be used to protect a microcomputer, can withstand one million 50-amp pulses of 20 milliseconds' duration (or 100 pulses of 500 amps of the same duration). In the home environment, such a

MOV should be good for the life of the computer.

Wiz,

I have an IBM PC with two disk drives, a monochrome board, a Quadcolor I board, AST Megaplug piggyback memory card (all of which adds up to a total of 640K RAM) and a disk controller for IBM floppies. In other words, packed full!

I'm worried that I may be overloading the power supply and/or generating too much heat inside the PC. I have had no problems, but I am concerned — especially considering that IBM's idea of an expansion board is a 64K memory board.

I haven't been able to find power consumption specifications on my add-ons and have not been able to find IBM's specs for power available to the bus. Need I worry?

Mark Spohr
Tahoe City, CA

Mark,

According to IBM, the basic PC comes with a 63.5-watt power supply; if you get a PC with the expansion unit, the power supply is rated at 130 watts. You didn't say if you have a hard disk or the PC XT model, so you probably have 63.5 watts of power available to the bus. To tell whether your add-in boards and peripherals are overloading your PC, you should get out the documentation that came with them. (If you don't have it or can't find it, write and ask for it.) Look at the specification sheets or the section of the manual that lists the specs. Usually the power rating is given in amps. (You multiply amp times voltage to get the power drain in watts.)

There are four voltages available from the PC's power supply: +5, -5, +12 and -12. The floppy-disk drives use the +12 volt supply, but almost all other peripherals use the +5 volt supply. The Personal Computer power supply puts out 4 amps of +5-volt power. Subtract the amps used by each peripheral from 4 amps to see if you are overloading your PC.

Thanks to Rudy Armstrong, president of Modern Power Technology, in Glendora, California, and Jill Liscom of IBM for help with some of this week's questions.

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Events: February 20 - 26

MON 20

Los Angeles, CA: David T. Kearns, CEO and director of Xerox Corporation, will be the keynote speaker at the Fifth Annual 1984 Office Automation Conference being held February 20-22. The conference program will feature over 45 sessions, industry workshops, professional development seminars, special activities and exhibits. Contact: Ann-Marie Bartels, (703) 620-8926. Location: Convention Center. Admission: \$100 advance registration, \$125 on-site (includes sessions, workshops, exhibits and digest); professional development seminars only, \$75 full-day session, \$45 half-day session.

Reno, NV: Pick Spectrum '84, which focuses on this particular operating system, will feature 14 sessions on computer education for business management, February 20-22. These sessions will start with an introduction to computers and then systematically guide the individual to an understanding of a total computer solution. Contact: (619) 578-3152. Location: MGM Grand Hotel. Admission: \$350 for full show (includes three meals).

TUES 21

San Francisco, CA: The San Francisco Commodore Users' Group will present a miniseminar and question-and-answer period on computing with the Commodore. The panel will be composed of Roger Tierce and Terry Silveria, authors of the *Commodore VIC 20 Users Encyclopedia* and the *Commodore 64 Users Encyclopedia* respectively, published programmers and technical consultants. Information on the new Commodore 264 and 364 computers will also be available. Contact: Roger

Tierce, 278 27th Avenue 103, San Francisco, CA 94121; (415) 387-0225. Location: Lake Merced Boathouse. Time: 7:30 P.M.

Greeley, CO: The Centennial Osborne Group (COG) will demonstrate two MBasic finance programs that have been modified to include printout routines. A brief review will be given of the COG disk library, which contains approximately 100 disks. Contact: Tony Wu, COG, 925 16th Street, Greeley, CO 80631; (303) 353-9667. Location: Miner and Miner, Consulting Engineers, 910 27th Avenue. Time: 7:00 P.M.

WED 22

Boston, MA: Douglas R. LeGrande, IBM's vice-president of operations from Boca Raton, Florida, will discuss and demonstrate the new PCjr at the Boston Computer Society's general meeting. He will also explore the entire PC product line for 1984. Contact: BCS, (617) 367-8080. Location: New England Life Hall, 225 Clarendon Street. Time: 7:30 P.M.

THUR 23

Monterey, CA: The Technology Entertainment Design (T.E.D.) Communications Conference will present a four-day exploration of communications creativity, solutions and technology, with in-depth visual and audio presentations by leading creators and practitioners. Conference presenters range from Apple and IBM representatives to Herbie Hancock and Edwin E. Catwulf from Lucasfilm. Contact: Judi Skalsky, Director, T.E.D., (213) 854-6307. Location: Conference Center. Admission: \$475.

New Orleans, LA: "Computers Now! The Future is Today" is a

seminar sponsored by the Association for Educational Data Systems from February 23 to 25. Hands-on workshops include introductions to microcomputers and to Logo graphics and evaluation of educational software. Presentations of papers will be given, and vendors will exhibit all three days. Contact: Dr. John Hubbell, (504) 342-0090. Location: Monteleone Hotel, 214 Rue Royale. Admission: \$45 (includes association dues, luncheon, hands-on workshop and session abstracts); \$25 students.

Scottsdale, AZ: AI Trends '84 will feature a seminar/panel discussion on the potential product capabilities and bottom-line economics of the emerging artificial intelligence (AI) industry. The five major categories of AI — expert systems, visual recognition, voice recognition, computer-aided instruction and natural-language software — will be discussed. Contact: DM Data, Seminar Secretary, (602) 945-9620. Location: Ramada Valley Ho, 6850 Main Street. Admission: \$225 (includes luncheon and class notes).

El Segundo, CA: "Eric Blair," British futurist and author, will present a keynote speech on "Men, Machines and Media" at Digital Computer Association's tongue-in-cheek 32nd annual symposium and banquet. Dr. R. D. Stone of Symbolics, an observer since pre-ENIAC days, will share his recollections and collected folk-history of the computer age. Contact: Jerry Koory, (213) 393-0411. Location: Air Force Systems Command, Los Angeles Air Force Station. Admission: \$22.50 advance registration, \$25 at door.

SAT 25

Seattle, WA: The Northwest Computer Society will hold a joint meeting with the Puget Sound Chapter of the Association for Computing Machinery (PSACM) at this Meet Your Officers night. Dr. Paul W. Abrams, an ACM

national speaker and computer consultant, will speak on the latest developments in artificial computer intelligence. Contact: Northwest Computer Society, P.O. Box 4193, Seattle, WA 98104; (206) 527-1852. Location: South Seattle Community College. Time: Call for information. Admission: \$6 to \$9 for dinner.

San Mateo, CA: The Computer Supermarket Personal Computer Show will offer savings on a wide variety of hardware and software products for business, education, entertainment and home uses. Accessories, supplies, peripherals and complete personal-computer systems that represent many brand names will be available at the show. Contact: Microshows, (415) 571-8041. Location: San Mateo County Fairgrounds. Time: 10:00 A.M. - 5:00 P.M. Admission: \$6.

SUN 26

Hamden, CT: The Connecticut Computer Society (CCS) will present the following six seminars: Selecting a Home Computer, Timex Sinclair Models 1500 and 2068, The Compatibility of Software, Logo for Kids, Features of the Adam and Minitimate. Contact: Bruce Brown, CCS, 180 Bloomfield Avenue, Hartford, CT 06105; (203) 233-3373. Location: Quinnipiac College. Time: 1:00 P.M. - 5:00 P.M.

InfoWorld wants to keep you informed about the latest users' groups and their agendas, speakers of note and other computer-related events. If you have any items to contribute, please write to the Events Editor, InfoWorld, 1060 Marsh Road, Suite C-200, Menlo Park, CA 94025. In order to meet publication deadlines, send your information six to eight weeks in advance. Check with the contacts listed for any schedule changes that may occur in the interim.

—Barbara Gerh, Events Editor

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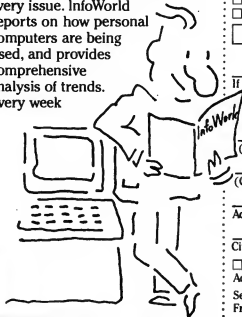
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New developments may decide battle over Unix

BY TOM SHEA
Reporter

The Unix operating system, long talked about but seldom seen on microcomputers, may finally arrive — as the object of a battle between IBM and AT&T for control of the market.

Two announcements in the past two weeks have drawn battle lines that not only involve those heavyweights, but also two other foes, Digital Research, Inc. (DRI) and Microsoft Corporation, and may decide which version of the operating system will prevail on personal computers.

The latest moves in the Unix marketplace scored a victory for DRI, which secured a relationship with AT&T, the developer of the Unix system. They were a loss for Microsoft, which saw its multimillion dollar Xenix version of Unix for the IBM Personal Computer snubbed by IBM.

Unix was developed by Bell Laboratories in the early 1970s, but only recently has it become the subject of struggles between the two giant companies. The operating system has been heralded by its backers as a savior from the problems of incompatibility in microcomputers, and as a means of bringing big-computer software power to microcomputers as the hardware grows more sophisticated. One of Unix's distinctive features is that it lets you connect subroutines together with software "pipes," thus letting you move data between programs easily and connect unique applications.

The importance of Unix for smaller microcomputers lies in three qualities: its ability to extend big-computer power to personal computers that act as workstations; the ability to transfer or "port" applications that run on Unix between a wide range of machines from different manufacturers; and its multitasking capability.

The most surprising development of late is the AT&T-DRI partnership, under which the two firms will jointly produce application programs to run on the most recently released commercial version of Unix, System V. DRI's compilers for its programming languages will become the System V standard under the agreement that was announced in Washington, D.C., at last month's Uniform conference. The agreement is DRI's strongest move yet



into the Unix market and places it squarely against Microsoft. DRI executives term the deal a coup that gives them a big advantage in competition against Microsoft.

"We've pulled off a major coup in round three," says Gary Gysin, DRI's product line manager for operating systems. "Round one was the 8-bit processor. We provided the standard operating system, CP/M. Round two was the 8088; we lost that one. Round three is the 286 and the 68000. We're winning that one."

The move is also part of DRI's continuing effort to establish a greater presence in retail stores. The firm has reoriented its strategy from pursuing CP/M exclusively to providing compatibility with other operating systems (including Unix System V) and to developing libraries of applications for retail sale.

"DRI is standardizing on System V," Gysin says. "Also we have become somewhat of a publisher. We market applications by others through what we

call the DRI Library. A joint AT&T-DRI committee will approve certain applications from the library as System V applications. And we and AT&T will sell them at the retail level."

For its part, AT&T wants the relationship to help tip the scales in favor of System V, as opposed to the System III versions being offered by Microsoft and IBM, among others. The primary objective, according to AT&T, is to "increase the commercial value of the Unix System V operating system and bring about its emergence as an industry standard." Observers see it as a definite move by the firm to establish some control of the market by controlling the version of the Unix operating system that gains prominence.

If AT&T has its way, one of the most affected companies will likely be Microsoft. Microsoft, which gained prominence in the operating-systems game when IBM adopted DOS to the IBM Personal Computer, may have been cut adrift by the

computing giant. When, as expected, IBM unveiled, PC/IX, a version of Unix for its top-selling PC, Microsoft and Xenix were not involved. Instead, IBM chose another company, Interactive Systems Corporation of Santa Monica, California, to supply the software.

In choosing Interactive Systems, IBM has snubbed both Microsoft's multimillion

will be supported by IBM and will cost \$900 when it becomes available in April.

DRI, looking hungrily at the Unix market, is cautiously pleased at Microsoft's jilting. "Microsoft will have to rethink its strategy," says Gysin.

But Microsoft itself dismisses IBM's move as insignificant, saying it will have little impact on the retail market. The

IBM announces the software."

Bauer, like many observers in the Unix community, speculates that IBM made the move to counter AT&T. "We don't think [the PC/IX announcement] is part of the IBM marketing strategy," he says.

John Ulett, Microsoft's product marketing manager for Xenix, says the IBM announcement validates Unix as an important operating system and may even boost Xenix sales. "I think IBM wanted to have something so the sales reps would have something to sell," he says. "That way IBM could endorse Unix as an operating system, but that doesn't say very much."

Ulett also downplays the potential of the alliance between AT&T and competitor DRI. "Nobody's sure what it all means yet," he says. "What they're saying sounds good on the top, but whether there's substance underneath isn't clear yet. DRI and AT&T announced an agreement to put out a joint applications library for System V, but what isn't said is that it will not run on other versions of Unix. You're still where you were before. If I buy a 286 port from AT&T and you do a similar kind of application, there's no guarantee that it will be compatible."

Unix watchers are abuzz with different interpretations of the signals the two giants are sending. The head of one small

IBM has snubbed both Microsoft's multimillion dollar investment in Xenix and AT&T's determination to establish System V as the dominant Unix version.

dollar investment in Xenix and AT&T's determination to establish System V as the dominant version of Unix. PC/IX, which stands for Personal Computer Interactive Executive, is derived from Unix Version III, as is Xenix. IBM sales representatives will sell the multitasking operating system, which comes on 19 diskettes. PC/IX runs on an IBM PC with a fixed-disk extension or on the PC XT. It

company points out it was not IBM's Personal Computer division in Boca Raton, Florida, that made the announcement, but the company's Interactive Systems Division in New York City. And IBM will not offer its product through retail channels for the time being. Says Microsoft spokesperson Rod Bauer about PC/IX, "It's not a retail product. Boca Raton owns the PC hardware, and then this other division of

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software house explained his cautious position: "There are two elephants dancing here and I'm just trying to keep from getting stepped on."

Some are convinced the whole thing is nothing but talk on the part of AT&T.

"My feeling is that the AT&T-DRI announcement sets some sights to a market that hasn't had any sights," says Larry Michels, president of the Santa Cruz Operation, a small software house in Santa Cruz, California, that sells Xenix and other software for the IBM Personal Computer.

"The Unix market went slower than expected. IBM has clearly said that this is legitimate, that Unix on the PC is legitimate," says Michels. "Microsoft could hold its position with little effort

before, it now has to increase the energy its putting into this. It can't stand still.

"Xenix is a solid product. I'm convinced there's a large, steady market for Xenix. Microsoft has become complacent. Now it has a challenge that it will rise to."

Michels senses no real commitment from IBM to its PC/IX. "The day the announcement came out, IBM stock went down," he says. "People thought that going for an AT&T operating system was a sign of weakness. If you think about it, IBM took a nice easy way of taking one step forward without playing all its cards."

Michels thinks Microsoft will increase its commitment to Xenix as a result of the recent posturing by both AT&T and IBM, rather than backing off. But Michels is still

skeptical. An industry wag has noted that the giant AT&T, with hundreds of thousands of employees, is the largest start-up computer company ever, and Michels points out that AT&T is still new to the computer business. "The proof of a leader is leading," he says. "AT&T is attempting to do that, but it remains to be seen. IBM doesn't always succeed, but generally you can say it has a record of leadership."

That's the way Microsoft reads the signs, too. "I don't think this has altered our plans," Ulett says. "It didn't make us start and say, 'Gee! There's no giant reaction inside Microsoft. We have a very good relationship with the people in Boca Raton.'"

MicroPro offers programs on how to use its software

BY KATHY CHIN
Reporter

MicroPro has developed the first program in its own software-training series, competing head-on with companies such as ATI and Sedex that offer programs to teach consumers how to use MicroPro software.

"Our marketing research shows that many companies base their buying decisions on the amount of training software available," says Janice Pasco, director of marketing service at MicroPro.

MicroPro is the developer of the popular WordStar word-processing program, which has sold over one million

copies during its four-year life span. In March, the San Rafael, California, firm will release the first of its StarTutor Series, WordStar Extended Lessons. The program will cost \$79.95. Each of its six learning sessions last from 20 to 30 minutes and take users step by step through explanations ranging from how to start up a computer to how to format documents and other manuscripts. The first version of the program will be available for IBM PC and PC-compatible machines.

By April, MicroPro will also be offering the InfoStar data-base-management tutorial program for under \$80. MicroPro software authors are hoping that they'll

complete training software for the rest of their product line, which includes PlanStar, CalcStar and StarBurst, by the end of this year.

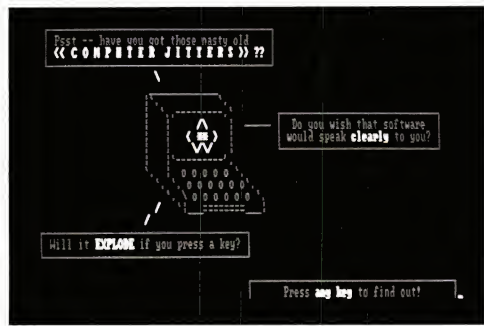
The privately held company has also unveiled its training products on videocassette tapes for businesses. The 40-minute WordStar videotape is priced at \$99.95 and will be offered in the spring. The benefit of tape training as opposed to classroom instruction is that workers dispersed throughout a company's branch offices will all receive the same, standardized training, according to Vincent Ford, MicroPro's manager of instructional systems.

"Our products have had a reputation for being hard to learn and hard to use," says MicroPro's new president, H. Glen Haney. "We are attacking both problems with the StarTutor Series."

The firm is already shipping two software tutorials, called FearNot and Quick Lessons, bundled free of charge with WordStar. The two packages provide novice users with basic keyboard instructions and simple WordStar commands.

"The reason we waited this long to come out with a training product is that we had to develop our own authoring language to write the appropriate software," says Donna Blumenthal, manager of technical communications. The programs are written in MicroPro's Control Language, which, according to the firm, allows for flexibility in animation.

Unlike other programs, say company officials, the StarTutor Series learning method is based on an approach that forces users to remember control functions to create a document rather than on a routine step-by-step hand-holding method. For example, the WordStar tutorial program shows a WordStar menu at the top of the screen and an interactive lesson at the bottom. Users learn the numerous WordStar commands at their own pace, through exercises and games.



FearNot, a WordStar tutorial, generates this introductory screen.

OPEN ACCESS™ Reads, Writes It Paints in 3-D, Keeps and

Manage Your Information.



HQ just called. For 1984 they want revenues of 10 million and profits of 1 million. They want the sales history and a forecast—today—in Chicago.

I waste no time. With the information manager, I quickly combine and retrieve information from the (1) sales department file, (2) marketing department file, and (3) manufacturing department file. With the push of a button, it all gets sent to the electronic spreadsheet.

Project the Figures.



Inside the spreadsheet, I must now calculate the sales volume and advertising expenditures to meet HQ's 1984 goals. But, if I can play the "what-if" game, finding the right combination of figures could take hours.

Luckily, the spreadsheet I'm using has Goal Seeking. This way, I can enter my two target values and let the spreadsheet calculate the right combination of sales volume and advertising. This way, I know I've got the right values—

Graph Your Results.



I've learned that HQ doesn't like wading through reports to get the bottom line—they want to see it as clear as day. So, I'll move the spreadsheet results directly into the graphics module. In a few keystrokes I have a mountain of raw data distilled into a bright, three dimensional color bar graph.



and does Arithmetic. Your Appointments Talks to the World.



Write Your Summaries.



Fortunately, this word processor is powerful enough that I can quickly call up last year's sales report, edit the changes, copy in the spreadsheet model, and include a command to print the graphs at the end of the report.

Now, I can rewrite the critical lead paragraph to get the wording just right, perform a global search and replace to update the year, and block margin the paragraphs for a professional appearance. 9:43 am. Finished!

Communicate With Your Offices.



After a quick review of all the work done, I thank my lucky stars for the powerful communication module. This allows me to simply display HQ's phone number from a list and with the push of a button, my intelligent modem calls the number. Then, a few keystrokes and—zip—I've sent it all to Chicago by electronic bit stream. Time 10:47. I just saved 4½ days!



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And Still Keep Your Appointments.



I expect the quality of this report to raise some eyebrows at HQ. So, I'll schedule the rest of today off since I've already finished a week's work. Fortunately, my appointment scheduling system reminds me of my dentist appointment at 4:30. I'll also schedule a briefing at 9:00 am tomorrow for the sales staff and my secretary can use the rotary card file to call everyone on the list. Well, I'm off for the golf course—Good-bye!

Initially available on the IBM-PC and compatibles.

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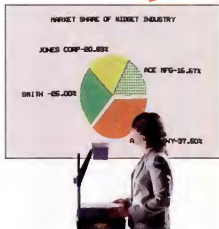
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Review: FilePlan

BY GIOVANNI PERRONE

Contributor

FilePlan is a computerized personal-filing system. It's like an electronic card file or address book. With it, as with a manual system, you can quickly and easily create and store files of information such as phone lists, tax records, important dates, inventories and similar items. In a manual filing system, however, each card or page is limited to a single organizational scheme — editing, changing and reordering are cumbersome, and report generation is tedious and time consuming. FilePlan allows you to easily create, store, sort, edit, delete and print files of information.

FilePlan is flawed by erroneous and inaccurate documentation. Though experienced computer users will be able to work with it, newcomers will find FilePlan's documentation a major obstacle.

If you like spreadsheets, you will love FilePlan because it provides you with a framework for quick and easy data organization. This program's organizational scheme is unlike that of other popular filing systems. As in a spreadsheet, you enter information into the cells formed by the rows and columns of a table. Each row or record is like a page in an address book. Each column or field contains the same type of data throughout the file, such as name, address or phone number.

FilePlan starts with a five-column worksheet, which you can expand to a maximum of 32 columns. Each column is initially 12 characters wide. You can change the column width and add your own column heading.

FilePlan can manage up to 32,000 records in each worksheet, and each record can have a total of 2048 characters. Of course, these are the limits of the program; your real file size is limited by the amount of disk storage available on your system. You can create any number of files.

FilePlan has an adequate 19-option command menu linked to the PC's function keys. The command sequence and structure are easy to remember and use. The program reads most commands from disk, which limits execution speed. Response to commands is on the slow side, but overall, response times are reasonable.

When you load FilePlan it automatically

presents you with a blank worksheet, so you can immediately enter data. You go to the program's main menu by depressing the F10 key. The PC's cursor-control keys and 17 control-key sequences allow you to move through the worksheet by positioning the "data cursor," a cell-size, reverse-video bar. The on-line Help key is as close as your function keys (F9, to be exact). One menu command, Reports, does not work, and it is not described in the program's users' guide.

If the worksheet cell you choose to work with already contains information,

that information automatically appears in the editing area on line 3 of the screen. You type the new data or edit existing data in the editing area and depress Return to fill the cell. FilePlan then moves the data cursor to the next cell.

You can sort information into any order you choose and can select subsets of any file according to conditions such as equal, not equal, between two values, less than, greater than and so on. You can then store subsets as differently named lists.

FilePlan provides you with the flexibility to easily modify existing worksheets. You can add new entries at the end of the list and let FilePlan order them in accordance with your sorting scheme. When you add to a worksheet, the program automatically updates lists that you have created from existing worksheets. You can add a new column of data, reformat existing columns and hide a column without losing your data.

FilePlan's Forms mode allows you to switch from the normal worksheet display and view all the data (15 fields at a time) of a particular row.

FilePlan provides advanced data-entry features. You can define a message that will appear at the top of the screen when you enter data and that will prompt you for each field. The program lets you define minimum and maximum values for numerical fields, and you can define coded values so that, when you enter a value, FilePlan will display a longer description in the field. For example, by defining "Performance (1 = Excellent, 2 = Good, 3 = Poor)," you can enter a value (such as 1) and get the longer description (such as Excellent).

FilePlan arrives ready to run on the IBM PC. All you need to do is make a backup copy of the distribution disk and copy the sample FilePlan worksheet onto a data disk.

FilePlan protects you from your own mistakes. Every time you enter a full screen, FilePlan automatically stores your data to disk. An Undo command lets you recover from bad entries by recreating the table from the disk file. FilePlan is forgiving — no keystroke has catastrophic results. The program verifies every command that is potentially destructive by asking, "Are you sure? Y = Yes/N = No." A universal Cancel command (function key F10) lets you gracefully back out of

InfoWorld Report Card

FilePlan



	Poor	Fair	Good	Excellent
Performance	☐	☐	☒	☐
Documentation	☒	☐	☐	☐
Ease of Use	☐	☐	☒	☐
Error Handling	☐	☐	☒	☐

Summary: Chang Labs' FilePlan is an easy-to-use and effective personal-filing system that uses a spreadsheetlike structure as its base. It has two drawbacks: its documentation is totally unacceptable, and it is priced higher than comparable products.

Product details: List price, \$295. Available for IBM PC under PC-DOS or compatibles under MS-DOS. CP/M versions also available. Requires 64K RAM; at least one disk drive; printer and second disk drive recommended. Published by Chang Laboratories, 5300 Stevens Creek Blvd., Suite 200, San Jose, CA 95129; (408) 246-8020.

inadvertent commands. The program is tolerant of mistakes, and we had no problem with the way it handled errors.

Though the program can tolerate your mistakes, we cannot tolerate the documentation. The documentation supplied with this version of FilePlan is so bad that it kills what could have been a good software value. It is totally uncharacteristic of Chang Labs' other file products, such as MicroPlan or MemoPlan.

Since Chang Labs writes its software to run under both MS-DOS/PC-DOS and CP/M, the company likes to keep its documentation generic. As a result, every page of FilePlan's manual contains errors and inconsistencies, rendering the program troublesome to first-time users. It is rife with inadequate information, minimal examples and incomplete display descriptions. The documentation omits a command description (Reports) and a description of dictionary fields. It provides an erroneous command description (Control V) and an appendix (B-Back-Up and Recover) that tells you to use PIP (from CP/M) to copy files. Clearly, Chang Labs did not see its way to update the manual to make it specific to the IBM PC. These are all annoyances to experienced users and can be major hurdles to new users.

If you do manage to wade through the

users' guide, its otherwise excellent progressive-tutorial approach does a thorough job of teaching you how to use FilePlan.

Although our copy was called a "Demo Kit" and included four pages of IBM PC customization notes, it turned out to be the same as production versions.

Although Chang Labs depends on its dealers for direct customer support, it does respond promptly to technical ques-

tions. For a nominal fee, it provides new releases of any of its programs to registered owner-license holders.

Overall, FilePlan is an easy-to-use and effective personal-filing system, and its spreadsheet-like structure is a real plus. The existing documentation, however, fails utterly and must be completely redone before FilePlan is really ready for the market. This product also costs more than comparable filing systems. ●

Review: Electric Pencil PC

BY MARK RENNE
Contributor

The original Electric Pencil word-processing program was introduced five years ago for use with Radio Shack TRS-80 computers. This new version of the program, called Electric Pencil PC, has been completely rewritten to take advantage of the special features of the IBM Personal Computer.

In this review, we evaluate Electric Pencil PC, as well as two supplementary packages — Pencil Ace and Pencil Tutor.

Pencil Tutor is an extended Help facility with 62 individual screens for Electric Pencil PC commands. Pencil Ace (Advanced Console Editor) adds sophisticated features for advanced text-editing work.

Electric Pencil PC is easy to use and should appeal to people with all levels of word-processing expertise. You can perform many word-processing functions with the PC's function keys, and the rest of Electric Pencil PC's operations require only one- or two-key sequences. As with WordStar, novices can choose a Help level, which constantly displays commands. You

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simple steps required to create, send, receive, display, list, name and re-name files. It even receives data completely unattended—especially helpful when you're sending work from home to the office, or vice versa.

If you need it, there's always "help." This feature explains prompts, messages, etc. to make communicating extra easy.

With Smartcom II, it is. Case in point: Before you communicate with another system, you need to "set up" your computer to match the way the remote system transmits data. With Smartcom II, you do this only once. After that, parameters for 25 different remote systems are stored in a directory on Smartcom II.

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Smartmodem 1200B. (Includes telephone cable. No serial card or separate power source is needed.)



Smartmodem II communications software.

NOTE: Smartmodem 1200B may also be installed in the IBM Personal Computer XT or the Expansion Unit.

In those units, another board installed in the slot to the immediate right of the Smartmodem 1200B may not clear the modem; also, the brackets may not fit properly. If this occurs, the slot to the right of the modem should be left empty.

And, in addition to the IBM PC, Smartmodem II is also available for the DEC Rainbow™ 100, Xerox 820-II™ and Kaypro II™ personal computers.

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SOFTWARE

can also eliminate the Help information if you want more space for text.

Electric Pencil PC uses sound, color and the IBM PC's special word-processing function keys. The program even makes up for some of the machine's deficiencies. For example, Electric Pencil PC indicates whether the Caps Lock or Num Lock keys are activated or not — a convenient and well-implemented feature.

Electric Pencil PC performs well. On its own, the program has the features most users require for general word-processing work. The product would have been significantly improved, however, if IJG had included some of the features that are available in the optional Pencil Ace package. In particular, Pencil Ace's ability to define colors and its cursor-movement abilities are useful enough to be part of the main product.

Many word-processing programs are slow when you run them on the IBM PC, but Electric Pencil PC performs with alacrity in all respects. With its 80-character buffer, it can keep up with even the speediest typist.

On IBM monochrome displays, Electric Pencil PC underlines words and displays boldface characters. On color monitors, it uses different shading and colors to illustrate these effects.

Electric Pencil PC has commands for inserting and deleting characters and lines or blocks of text, but it does not have a Delete Word command. You can mark the word as a block and then delete it, but it's simpler to delete the word a character at a time. This is an unfortunate omission in a word-processing product.

To preserve text you want to move to another part of your document, and to prevent you from accidentally eliminating text, Electric Pencil PC uses a specially reserved area of memory called a buffer. You can store text in the "cut and paste" buffer and then move it within the file. The program stores anything you delete in this memory. Should you accidentally erase material in your document, you can recall it — it's as if you had never deleted it. reserved area of memory called a buffer. You can store text in the "cut and paste" buffer and then move it within the file. The program stores anything you delete in this memory. Should you accidentally erase material in your document, you can recall it — it's as if you had never deleted it.

While editing, you have one of five different Help levels at your disposal, ranging from no help at all to a complete list of commands. In addition, the Pencil Tutor companion program supplies a Help screen for each Electric Pencil PC key sequence. The PC stores the Pencil Tutor file on disk, so it uses no memory.

You move through operation of the program by using menus. You use the

System menu to load, save, rename or delete files from a diskette, and you can save files in either ASCII or Electric Pencil PC format. ASCII files are compatible with the PC-DOS Edlin editor. You can also request a directory of the disk, and the program permits you to make use of the Chdir function.

The Print menu contains format information for your text file, such as margins, line length, line spacing, page spacing and justification defaults. You can also embed print-format commands within your document if you wish to change the format in certain places. For example, you can single-space one paragraph in otherwise double-spaced text. You can also save the format information you select with the Print menu to disk with the text file.

Pencil Ace adds additional commands

InfoWorld Report Card

Electric Pencil PC



	Poor	Fair	Good	Excellent
Performance	☐	☐	☒	☐
Documentation	☐	☐	☒	☐
Ease of Use	☐	☐	☒	☐
Error Handling	☐	☐	☒	☐

Summary: Electric Pencil PC for the IBM PC is a credible update of a word-processing program originally developed for the TRS-80. It performs best when used with its optional companion programs that provide additional Help files and improved cursor movement and color options. The company's decision not to establish an upgrade policy for the product is regrettable.

Product details: List prices: Electric Pencil PC, \$299.95; Pencil Ace, \$149.95; Pencil Tutor, \$49.95; bundled package of all three includes a \$50 rebate. Available for IBM PC running PC-DOS 1.0, 1.1 or 2.0. Requires 48K RAM; one disk drive; monochrome or graphics display; printer. Published by IJG, Inc., 1953 West 11th Street, Upland, CA 91786; (714) 946-5805.

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and features to Electric Pencil PC. You can reprogram the entire keyboard or individual keys if you need to produce text in a different language or if you want to have a nonstandard keyboard layout. You can define screen colors for text and formatting effects. You can vary the width of the screen and employ multiple screens. Pencil Ace also allows Electric Pencil PC to display page breaks and on-screen print formatting.

Because Electric Pencil PC is designed for only one computer, installation is quite simple. You can easily install both of the supplementary packages of the Electric Pencil PC System using only one menu command.

Electric Pencil PC handles errors gracefully. Messages are generally self-explanatory, and the manual contains an explanation of each one.

One 240-page, 8 1/2 x 11-inch bound manual contains information for Electric Pencil PC and its companion programs. It contains a table of contents, index and glossary, and arranges the commands in the order in which they appear on the

menus. Each command is clearly defined, explained and illustrated. The manual is liberally sprinkled with examples and sample screens. The package also includes a quick-reference card.

IJG supplies Electric Pencil PC and its companions on unprotected diskettes. We found no mention of any warranty and were surprised to find a clear statement indicating that the company has no intention of upgrading this product. This is a bad policy. Owners should be able to upgrade to an enhanced version of a program at a discount. Electric Pencil PC does, however, include a program that allows you to include any corrections that IJG may issue.

When supplemented with Pencil Ace, Electric Pencil PC is a fairly solid word-processing program that makes the most of the PC's special keys, sound, color and graphics. Given that it got its start several years ago as a TRS-80 program, it does a credible job in today's environment. It does, however, have some omissions — such as the lack of word deletion — and IJG's no-upgrade policy is off the mark. ●

Review: Condor 3

BY SCOTT MACE

Senior Writer

The Condor 3 data-base management system, like all such systems, must be measured against the best-seller, dBASE II. We think that Condor 3 represents a trade-off — you gain ease of use, but you sacrifice some of dBASE II's power. Another important consideration is cost — the Condor 3 system is almost as expensive as dBASE II.

dBASE II has two big problems: data entry and report formatting. Its shortcomings in these areas don't bother professional programmers because the dBASE II language is powerful enough for them to write their own dBASE II applications. When novices try to use dBASE II, however, they find its language cumbersome and confusing. Hence, a software cottage industry has sprung up around dBASE II to provide such data-entry "front ends" as Quickcode and DBPLUS, as well as sophisticated report writers.

Condor 3 may not be as flexible or speedy as dBASE II, but you also don't have to be a programmer to use it. You can bypass all the "essential extras" characteristic of dBASE II.

Condor 3 uses plain English commands or abbreviations, such as Define, List and Print, in plain English sentences with connectors such as And, Or, Where,

Whose and ST (such that). You string together these commands in simple English sentences. Condor 3 also uses basic math functions such as Sum, GT (greater than), LT (less than), Max and Min. With these commands, you can set up simple accounting files, though the program is no substitute for more-sophisticated accounting programs.

When you begin using Condor 3 you create or enter a data base by typing Define and the name of the data set (several data sets can form a data base). Condor 3 asks if you wish to create a new form, and you reply Y or N.

If you press the Y key, Condor 3 clears the screen and lets you design your data-entry screens by typing them onto a blank screen. Your field names must fall between brackets. You allocate the number of spaces for data in each field by typing underlines after the brackets and then define the different fields (types of information) for your data base.

We evaluated Version 2.10 of Condor 3 configured on two 8-inch single-density CP/M floppy disks. Our hardware system was a Xerox 820-11 with dual drives. The two single-density disks were read onto one dual-density disk using CP/M's PIP command, which permitted us to use the second disk drive as a data disk. You should free one drive for data on whatever system you use Condor 3. The Condor 3

version you buy should be configured for the cursor keys on your machine. If your version isn't properly configured, you must resort to an awkward backup cursor-key arrangement.

You spend a good deal of time waiting when you use Condor 3. Sometimes the wait is long enough to irritate you, even when you are working with short data bases of 25 records or so. The program tells you what it is doing and displays messages such as Writing Output File, but it will not give you any clue about how long an operation will last. Of course, the time may depend on the type of CP/M hardware you are using.

After typing your data-entry form, you define each data field. Condor 3 does most of the work by recapping on the information you entered when you created the form. Condor asks you if the field is alpha, numeric, alphanumeric, a dollar amount, a Julian date or if it is a required entry. You

InfoWorld

Report Card

Condor 3



	Poor	Fair	Good	Excellent
Performance	☐	☐	☒	☐
Documentation	☐	☐	☒	☐
Ease of Use	☐	☐	☒	☐
Error Handling	☐	☐	☒	☐

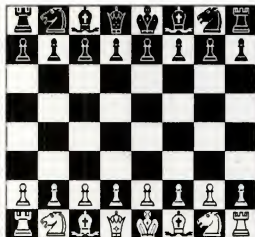
Summary: Compared to the popular dBASE II, the Condor 3 data-base-management system is less flexible and slower — and almost as expensive. You don't need programming skills to use Condor 3, however, because its commands are in plain English. Novice users get all the help they need to manipulate data and print reports.

Product details: List price, \$650. Available for only computer running the CP/M 2.2 operating system. Requires 64K RAM; one disk drive (two recommended); printer. Published by Condor Computer Corporation, 2051 South Stote Street, Ann Arbor, MI 48104; (313) 769-3988.

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can also establish a default entry (an entry that will automatically appear unless you change it) for any field. A printout of the data set's attributes is available when you finish.

With the List command, you can display your records by any field and include as many fields as can fit in the 80 columns on the screen. Print, a similar command, lets you print out simple reports. With Print, though, you are limited to one line per record. To print multiple-line records (for mailing labels, for example) you use Condor's Report Writer.

You can redesign your data-set entry screen to delete or add fields to your data base. If you type Reorg and the name of the data set, Condor 3 will present your old entry form. Editing is much the same as form creation; you can switch between inserting text and typing over old text. Unlike some other data-base managers, Condor 3 does not require you to change the offset number (a number that represents the starting byte location of a particular field). After you save the form, you must define each new data field in the same way as you did in the first place. Finally, Condor 3 asks if it can replace the old data set with the new one.

Any time you plan to perform a major operation in Condor 3, the program asks if you really want to do it. You must answer Y to erase data bases or make major changes.

The Condor Report Writer works in much the same way as the form editor. You create a report screen, test the report specifications and revise them before you display or print your report. Also, you can choose a short method or a long method to create reports. The long method gives you far more control of the report's appearance. The short method's main drawback is that the reports generated are single-spaced with no blank lines. If you want to

make mailing labels, you must use the long method.

You can use the program's Write and Read commands to get data out of a Condor 3 data base (or for that matter, to put it in). You can write Condor 3 ASCII files to various formats, including Basic, RPG, Cobol, Fortran or WordStar/MailMerge files.

Condor 3's documentation is much better than earlier Condor documentation. You receive two, thick loose-leaf manuals. One is the users' guide—a well-written, information-packed tutorial on the data-base manager and Report Writer. The other manual is a reference guide—a summary of the information in the users' guide that is organized by the command names. Both manuals are well indexed.

The documentation presents one problem, albeit minor: The users' guide has so many pages that it doesn't fit into either of the two binders supplied with Condor 3.

We were never able to lock up the Condor 3 program due to faulty error handling. About the only way you can do that is to remove your program disk. Condor 3's error messages are in simple English—you don't have to look up error numbers in the manual.

Condor 3 provides a quick-reference guide—a double-sized card that lists all the Condor 3 commands and the reserved words that you cannot use in your data set or field names.

Condor 3 also offers a Condor Database Course-Pac, which is designed to help schools and dealers teach novices how to use the data base. The Course-Pac includes a book for instructors, a book for students and the Vision-Pac, which contains 50 overhead-slide masters.

Condor 3 gives you all the tools you need to enter and rearrange data and print reports. It lacks the speed of dBASE II, but it compensates by offering convenience.

Review: BPI General Ledger Accounting System

BY SAUL D. FELDMAN
Contributor

The BPI General Ledger Accounting System, a comprehensive accounting package for the Apple II Plus, is geared for small- and medium-size businesses. It requires 48K random-access memory (RAM), two disk drives and an 80-column printer. BPI offers separate versions of the program for the Apple IIe and the Lisa. This review focuses on the

Apple II Plus version of the program.

The program comes on three disks (data entry, posting and file maintenance) that run on drive 1 while you enter data on standard initialized disks on drive 2. A set of backup disks is available for \$30, and you can replace damaged disks for \$10.

The main body of the program is the general ledger itself, which handles up to 400 accounts of various types: current assets, fixed assets, other assets, current liabilities, long-term liabilities, capital,

income, cost of sales, expenses, other income and other expenses. Account numbers are four digits long, and each account type has a specific range of numbers.

The complexity of the system can make initial setup a long, painstaking process. BPI's system can hold up to ten subaccounts, which permits you to separate financial data for different stores, projects or departments. All subaccounts must have the same last digit, and you must use this numbering system consistently throughout your chart of accounts. Since the program prints a profit-and-loss statement for all accounts with the same last digit, you must be careful in assigning these numbers.

Entering cash disbursements is easy. The program automatically increments check numbers, and you enter dates using the keyboard. You can post up to 12

InfoWorld Report Card

BPI General Ledger Accounting System



	Poor	Fair	Good	Excellent
Performance	☐	☐	☒	☐
Documentation	☐	☒	☐	☐
Ease of Use	☐	☐	☒	☐
Error Handling	☐	☐	☐	☒

Summary: The BPI General Ledger Accounting System is a comprehensive accounting package for the Apple II Plus. Designed for small- to medium-size businesses, it is a complex yet flexible system. It offers four separate ledgers: payroll, accounts receivable, accounts payable and cash sales. The General Ledger has many report options and effectively traps errors, but its speed, documentation and support are poor.

Product details: List price, \$395. Available for Apple II Plus. Requires Applesoft; 48K RAM; two disk drives; 80-column printer. Manufactured by BPI Systems, Inc., 3423 Guadalupe, Austin, TX 78705; (512) 454-2801.

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separate disbursements for any check. The program allows you to use multiple checking accounts, but you must list one account as the principal cash account.

Whenever you enter an account number, the program immediately displays a text description of the account. If you list a nonexistent account number, the program will not accept it. You enter a voided check by typing "void" as the payee. After the program has verified the void, it advances the check number to the next entry.

Cash disbursements are often made to the same payees. The BPI General Ledger lets you set up a list of payees with the one or two account numbers that you generally debit. To enter a check for one of these payees, you just type P and a payee number. The payee and the account to be debited then automatically appear on the screen. You can create up to 200 payee accounts, and the program can print a reference list of these accounts that is arranged alphabetically or by payee number.

The BPI General Ledger is flexible. It offers you four separate ledgers: payroll, accounts receivable, accounts payable and cash sales.

For most businesses, the most useful ledger is payroll. You can store payroll records for up to 100 employees on BPI's system. The ledger is limited to a gross-pay category and only three categories of deductions (federal income tax, social security and "other"). Since many states and municipalities require additional categories of deductions, the number of allowable deductions in the program's payroll register is not adequate.

To create a payroll, you assign each employee a number. The program then allows you 54 spaces in which to enter the employee's name and other information (department, social-security number and so on). To enter data, you type E and the employee's number. Unfortunately, you cannot list employees alphabetically.

The payroll ledger lets you easily obtain information for quarterly and annual tax statements. The program prints out payroll totals for each employee for the quarter and cumulatively for the calendar year. Since some companies' fiscal years differ from the calendar year, the program lists payroll information for tax purposes separately.

The program lets you establish up to 200 different accounts payable and up to 500 accounts receivable. Unlike when you use the payroll register, you can list customer and vendor accounts in alphabetical order. Again, data entry is simple—you use a letter and an account number.

Companies that use cash registers can use the program's cash-sales journal, which accepts up to 18 types of cash transactions per day. Entries can match

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cash-register keys and need not match general-ledger account names.

With so many journals and ways of entering data, you often have to correct and adjust entries or make an entry that cannot be handled by other journals. You can place such entries in the General Journal, which numbers each entry, prompts for a date and allows for a line of explanation. The program cross-references General Journal entries in the General Ledger.

In this three-disk system, you edit accounts using the maintenance disk. You can add or delete new accounts (only if the account has a balance of zero) and print out schedules. Although the General Ledger is a three-disk system, surprisingly little disk switching occurs. Tasks are well organized onto appropriate disks, and changing disks is a quick and simple process.

The BPI General Ledger is a carefully planned program with an impressive and extensive set of report options. The posting disk sorts entries and posts them to the proper category. You can print out balance sheets, profit-and-loss statements, the general ledger, accounts receivable, accounts payable, cash sales, cash receipts and a trial balance. Printed reports are well designed and easy to read. The profit-and-loss statement is especially impressive, since it lists not only expenses, but also each expense as a percentage of total revenue.

For individual expense categories, you often want to know how much and to whom expenditures were made during a fiscal year. The General Ledger has only enough space to print expenditures for the current month.

The BPI General Ledger is one of the few Apple II accounting programs that lets you view reports on the screen. The program does not accommodate an 80-column board, however, so you may have trouble viewing long entries.

The program's error trapping is excellent, with one small exception. In the double-entry accounting system, every credit must have a debit. If the entry does not balance to zero, the program does not accept the entry. (Debiting is done automatically when you enter cash disbursements.) If you do not want a zero balance, you make an appropriate entry in the General Journal. You are required to confirm that you desire the change. The program includes disk utilities that allow you to copy data disks and to check free space. Although copying a disk is easy, safeguards ensure that you copy the correct data onto the correct disk. The program's one error-trapping weakness is that you can enter an incorrect date, such as January 32.

The weakest points of the BPI General Ledger are documentation, support and

speed. The program comes with a poorly organized 100-page manual that lacks an index. Many of this program's users will be small-business owners who don't have sophisticated accounting skills, but the manual does not discuss the principles of accounting. It does assume that users know nothing about the Apple II and gives basic operating instructions.

The program includes a good tutorial. You get a sample disk that contains books from a grocery store, and you can practice entering data into those books. Almost 40 of the manual's 100 pages are a printout of the store's entire set of books.

Phone support, via a toll line to Austin, Texas, is not good. The line is usually busy, and the support staff's knowledge is of variable quality. BPI acknowledges the problem and states that it is planning a new system.

The major weakness of the BPI General Ledger is its slow speed. With so many possible accounts, it may take you more than two minutes to load data into the computer. To post a great deal of data, you can tie up your computer and printer for at least an hour.

BPI will not issue new versions of the Apple II Plus edition of the General Ledger; rather, it has revised and improved the program for the Apple IIe and renamed it General Accounting. The new program requires 64K of memory and an 80-column card in addition to two disk drives and an 80-column printer. You can use the IIe version on an Apple II Plus that has this configuration, so Apple II Plus owners planning to buy the BPI General Ledger should seriously consider obtaining the additional hardware and purchasing General Accounting instead.

General Accounting holds up to 1000 different accounts divided in any manner among the general ledger, payroll ledger, accounts-payable ledger, accounts-receivable ledger and lists of payees and payers. The new version offers a versatile cash-received journal as well as a cash-register journal, and it can print and post checks. It can print reports in both uppercase and lowercase letters. Most welcome is your ability to copy the program disks.

The manual for the new version is totally revised. It is clearer, much longer, well organized and has a useful index. It contains a glossary of computer terms but no accounting terms.

A comprehensive accounting system is inherently complex, but BPI has produced user-oriented accounting programs that follow acceptable accounting principles and can give businesses and nonprofit organizations a clear picture of their financial status. The time and effort that you must expend to adapt the system to your needs are well worth the investment. ●

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SOFTWARE

Review: Edu-Ware educational programs

BY CYNTHIA E. FIELD

Contributor

Edu-Ware Services, a branch of Peachtree Software, produces a number of educational packages, ranging from entertainment-oriented products for children to classroom products for older students. This review covers a sampler of three of the company's products: an introduction to spelling, a course in algebra and an introduction to Basic programming.

Spelling Bee Games sharpen spelling and reading skills, as well as concentration and eye-hand coordination. The games are suitable for either home or classroom use, and, perhaps best of all, children seem to like them.

Designed for children ages five to ten, Spelling Bee Games consists of four interactive word games on one disk.

Children playing these games for the first time need some guidance, which is easy for an adult to provide after reading the documentation. A Reconfigure option lets parents or teachers adapt the games to the abilities of the child playing them. You can choose from 22 categories of words either individually or in blocks. These categories include shapes, animals, two- and three-letter words, difficult multisyllable words and so forth. Adults can test the game paddles for reliability and range and can also enter the names and numbers of players.

The only snag is that the sounds the games make can be distracting in a classroom, and we could not discover how to turn the sound off. Apart from this, all four Spelling Bee Games perform well and are easy to use.

The software is tolerant of errors. For example, when the program asks for a number from one to four and you enter some other character, it does not respond.

The documentation consists of a clearly written, 20-page booklet. The last two pages of the manual help you troubleshoot problems when you confront an error message. If you can't discover the cause, Edu-Ware encourages you to call one of its representatives.

Hands on Basic Programming is an interactive guide to the essentials of the Basic language and computer operations in general. This clearly written and easy-to-understand package can benefit any inexperienced computer user aged 13 and up. The package consists of a 185-page manual and a diskette containing HoBasic,

a language similar to Applesoft Basic.

The HoBasic manual is the package's guiding light. You have control of the cursor at all times and, if you follow the manual, can quickly learn how to construct and debug programs. To further simplify this process, the HoBasic language provides you with immediate syntax checking. The manual takes you from simple arithmetic operations to Print statements; loops; Read, Data and Restore commands; inputs; arrays; and branching.

Each section of the manual takes you step-by-step through the programming process. It includes many figures illustrating the screen display. Margin notes contain comparisons with Applesoft Basic. Each section of the tutorial ends with a review and a table of newly encountered terms, commands and keystrokes.

Although we found a couple of errors, the documentation is well written. Definitions are precise; explanations are clear and related to the world of everyday experience. In addition, the author injects a sense of humor, which takes the edge off what might otherwise be a pedantic approach to programming. This package is so well done that, with a few minor modifications, we would recommend it without reservation.

Algebra Volume 1, which covers first-year algebra, is the first in a series of six volumes of tutorials suitable for secondary or remedial-postsecondary mathematics students. It covers the concepts of numbers vs. numerals, the number line, sets and rules for evaluating expressions.

The series is based on an instructional model that is clearly and precisely presented in the 17-page manual that accompanies the set. The program divides each major unit (for example, "Sets") into concepts. You can learn each concept using four approaches—definition, rules, examples and sample problems. If you don't perform well on the sample problems, the program highlights areas you should review.

A flowchart on Algebra's main menu keeps track of your progress. It is composed of rectangles representing each unit—rectangles outlined in white, highlight units not yet attempted; green, highlight units successfully done; red, those units attempted unsuccessfully; and blue, the unit recommended next. This flow diagram is an excellent means of charting your success, but only students with color TV's or color monitors can take advantage of this feature. Students can use

SOFTWARE

the tutorial with just a few keystrokes. The program ignores unanticipated entries, such as alphabetic characters substituted for numeric ones. You can stop working and continue later where you left off.

The program uses a small rectangular character to designate multiplication, which can be confusing at first. Nevertheless, Algebra Volume 1 presents concepts in a well-thought-out and instructionally sound manner.

InfoWorld Report Card

Edu-Ware Educational Programs

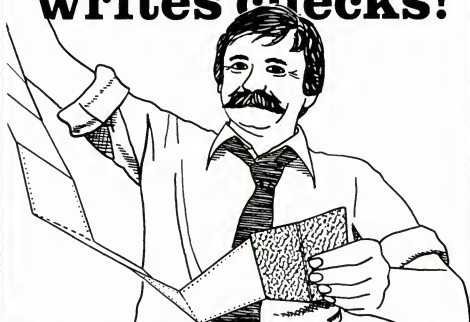


	Poor	Fair	Good	Excellent
Performance	☐	☐	☒	☐
Documentation	☐	☐	☒	☐
Ease of Use	☐	☐	☒	☐
Error Handling	☐	☐	☒	☐

Summary: Edu-Ware's games combine a sense of fun with sound educational theory to teach the elements of spelling, Basic programming and first-year algebra. Parents, teachers and students will appreciate their ease of use and solid error handling.

Product details: List price: \$39.95 for Spelling Bee Games, Version 1.1.1; \$79 for Hands on Basic Programming, Version 1.0; \$39.95 for Algebra Volume 1, Version 1.6. Available for Apple II, IIe, II Plus and Franklin Ace under DOS 3.3. Requires 48K RAM; 5 1/4-inch disk drive; game paddles (Spelling Games only). Spelling Bee Games also available for Atari 400 or 800 disk. Requires 48K RAM; disk drive; joystick. Algebra Volume 1 also available for IBM PC. Requires color monitor or color-graphics monitor adapter; under DOS 1.1 requires 64K RAM; under DOS 2.0 requires 128K RAM. Published by Edu-Ware Services, a division of Peachtree Software, 3445 Peachtree Road, Atlanta, GA 30326; (404) 239-3000.

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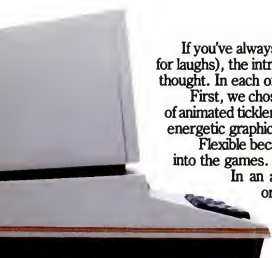
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Review Responses

Mouse is a mistake

I am pleased to hear *InfoWorld* and some of its readers question the virtues of the mouse/icon approach to computing. The mouse/icon device is now being widely advertised as a way of making computing easier to understand. But icons are, by definition, vague representations. I can't imagine an icon that would be clearer in meaning than a well-written phrase on a menu. Is a picture of a wastebasket clearer, more exact, than the phrase "erase a file"?

As for convenience, with menu selection you reach out and snap a key to make a selection; that has to be much faster than moving a mouse around among pictures. And where do you find table space for the critter? My computer table is a real workplace; in other words, it's cluttered. I'd probably have to go hunting for my mouse under papers and books and then clear a space for it every time I wanted to save a file.

I think the inventors of the mouse/icon device — and the software/hardware developers who are adopting it — have made a big mistake in judging the problems faced by novice computer users. Most of the confusion can be attributed to the poor quality of the instruction manuals accompanying hardware and software. Regressing to a pictographic representation of basic functions solves a problem that never existed and ignores the real difficulty — the necessary complexity of powerful software — which only good technical writing can ameliorate.

William Murdick
California, PA

Review fans

In consideration of your Letter from the Editor (December 5) concerning *InfoWorld* objectivity and technical competence in its product reviews: keep up the good work!

John Dinsmore
Executive Director
Association of Better Computer Dealers
Lexington, KY

We respect your reviews, and make most of our buying decisions based upon them. If you were slanting your reviews in

order to keep advertising dollars, you'd be no better than all of the other magazines. We appreciate the fact that your writers seem able to communicate in the English language. Many of the articles which appear in other magazines seem barely literate; if the technical jargon doesn't frighten prospective computer purchasers, the language used by too many "authors" will.

Carter & Sands
Attorneys at Law
Rifle, CO

After subscribing to *BYTE*, *Personal Computing*, *Popular Computing*, *Creative Computing* and reading through various issues of many others, I picked up a copy of *InfoWorld* and have every intention of reading every issue as long as it is printed. I appreciate a magazine with the guts to print a poor review without fear of losing advertisers. With so many new products arriving on the market, I know it's impossible to review them all but you make a fantastic effort.

Gary M. Dean
Seattle, WA

Backup provisions

I have just received my third issue of *InfoWorld*. Your software reviews are very good except that only one of them has included the first piece of information that I look for!

What are the provisions for backups? I suggest that this information be given in either the summary or the product details. If I do not find the backup provisions acceptable, I am not interested in reading the review.

Lowell Ray Anderson
Cody, WY

We attempt to include such information in the body of each review. — Editors

R:base 4000 ratings

I would like to take exception to your ratings of R:base 4000 (December 26/January 2). R:base not only provides its users with Help screens for easy reference, but allows the user to enter a Prompt mode whereby R:base actually

builds the command from the answers the user provides. Ease of Use should have been Excellent.

As for Error Handling, I defy you to name one microcomputer-based database-management system with more straightforward error messages. Error Handling, too, should have received an Excellent.

The arbitrary assignment of grades in your Report Card does a disservice to readers. Your review of Advanced DB Master, which immediately followed the R:base review, received three Excellents and one Good. An unsuspecting reader might conclude that DB Master is thus superior to R:base. While it is a very fine product, its capabilities fall far short of R:base's.

Garrett Schwartz
President
G.A.D. Consultants, Ltd.
New York, NY

Your review of R:base 4000 failed almost totally to assess the performance of the program for a business user. Not only was the review uninformative, but it was also misleading. In attempting to deal with the problem of speed, you did not inform us how many records were created in the test file. You then stated that "The speed of R:base in both cases is astounding. Information entry and information recall on our PC XT was instantaneous."

It makes no sense to mix data entry and data recall. They are intrinsically different operations. This example underscores a serious problem in attempting to make an assessment of a data base. Reviewers who assess compiler performance attempt to establish "benchmark" programs and to compare compiler performance against those benchmarks. I should like to encourage an establishment of some "benchmarks" for data bases so that you can give some meaningful statements and substantive, relative comparisons could be made.

Morton F. Kaplan
Pomona, NY

InfoWorld welcomes comments about its software reviews from both readers and software publishers. We hope this page will serve as a forum for discussion of the software industry and the improvement of software products. Please address your correspondence to the Technical Editor, *InfoWorld*, 1060 Marsh Road, Suite C-200, Menlo Park, CA 94025.

Electronic Antics

Is your game a winner?



BY SCOTT MACE
Senior Writer

Before you scream, "Not another video-game contest!" does a \$100,000 grand prize interest you?

If it does, read on. Video Games International, Ltd. (VGIL) in England is willing to pay a total of \$175,000 to worthy video-game developers. The contest, which is being advertised in 20 countries, is the brainchild of Mark McCormack, a promoter who represents such celebrities as Bjorn Borg and Martina Navratilova. McCormack is shown here playing a game at which he is most adept — tennis — on an Atari 2600 VCS.

At times, the contest announcement lapses into hyperbole. It notes that the winner will get "more than Miss World receives and almost as much as the men's singles winner of either Wimbledon or the U.S. Open."

But why not? The best video game in 20 countries is surely going to be worth some money to VGIL and McCormack (yes, the winners give up all rights to market the games themselves, which VGIL will market and license; but the authors will get 10% of the income received from sales of their games).

The International Video Game of the Year awards will be an annual event, according to McCormack. The competition is divided into six categories: sports, simulators, arcade games, strategy, adventure/fantasy and special. The special award will cover the best program that cannot be classified as a game, but which educates or entertains. VGIL will award \$15,000 to each of the winners in the five other categories.

Up to 25,000 entries are expected, and programs for any popular home computer will be accepted. For more information on the contest, contact Mark Eliot at Video

Games International, Pinewood Studios, Iver Heath, Buckinghamshire, England.

I'm always wary of these contests, because they could rob video-game designers of royalties they might otherwise get: 20% royalties are fairly standard throughout the software industry. But contests are probably worth a great deal more than their royalty and cash awards. They offer prestige to the authors and make them the superstars of an industry that so far has very few celebrities. Electronic Arts' efforts notwithstanding.

A few weekends ago I attended the Atari Program Exchange Awards at San Francisco's St. Francis Hotel, where Atari awarded \$25,000 to Mark Reid, a chemical engineer from Charleston, West Virginia. Reid wrote *Getaway!*, a game for Atari home computers. The Atari Program Exchange publishes Atari software written by free-lance programmers and computer users.

Despite his \$25,000 check, Reid is still not a celebrity outside the Atari user community. *Getaway!* is a great game, and it deserved the Atari award.

One thing awards can bring to authors is ownership of a business. Fernando Herrera, winner of the first Atari Star Award in 1982 with *Type Attack*, now runs his own company, First Star Soft-

ware, which had a booth at the recent Consumer Electronics Show. So, for Herrera at least, awards have been good.

Achieving the other major goal, mammoth sales, depends on good marketing and advertising. Awards alone are no ticket to success.

Before I close this week, I want to register my disgust at a recent decision by Commodore.

One of the pleasant surprises about the VIC 20 and the Commodore 64 is that any Atari-style joystick will work with these Commodore computers. Such compatibility is rare in this business. I should have known it was too good to last.

On the new Commodore 264 and 364 computers, the joystick port has been totally redesigned. You will have to buy new joysticks, probably from Commodore. Also, if you have other devices that plug into the 64, such as the KoalaPad, you won't be able to use them with the 264.

Why, Commodore? Are you so greedy that you have to have it all?

So far, I haven't gotten a good answer from the company. Software incompatibility I can understand, but this is ridiculous. I hope consumers complain enough to make Commodore revert back to the good old joystick port. Changing to the new port is bad public relations and bad business. ●



Mark McCormack, a promoter of the International Video Game of the Year contest

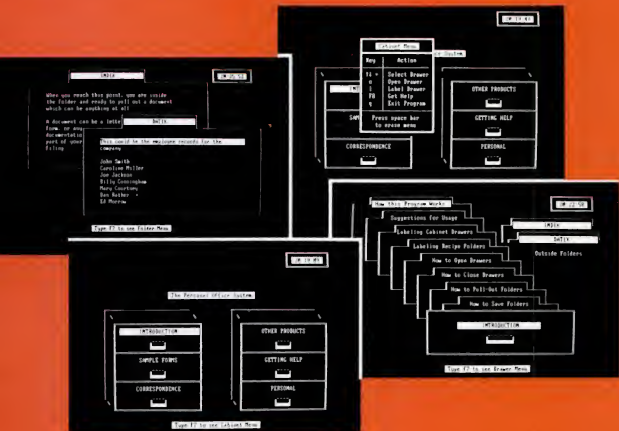
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New Programs

Filer gets rid of paper crunch: MicroFiler, a plug-in cartridge for Atari computers, gets rid of nearly any paper list or filing system by handling many types of lists — from recipes to name-and-address lists to club membership lists. It also maintains a checkbook log and keeps track of expense accounts.

MicroFiler enables you to browse through files; search for specific entries quickly and easily; add, subtract or average numbers; and sort or alphabetize entire files. The MicroFiler works with a printer and can create labels or print lists in any desired format.

MicroFiler also offers a general search, sorted search, range searching, multiple-field searching, full record search and sorting-only modes. The price is \$49.95.

Microbits Peripheral Products, 225 West Third Street, Albany, OR 97321; (503) 967-9075.

Model 100 word-processing package saves RAM: Scribe, a word processor for the Radio Shack Model 100, has been enhanced to work with the computer's built-in Text program, saving at least 2K RAM.

Scribe 3.0 has menu control and gives users messages that prompt for defaults. The program has standard formats for pica, elite and micro-size type. Automatic page-numbering is now a feature, and you can use continuous tractor-feed paper or individual sheets.

Other features include the ability to make multiple copies and keyboard input to personalize form letters; the ability to do basic word-processing without learning special commands; customization to utilize features of dot-matrix or other printers; display of directory for file selection; and the ability to print documents of any length from a combination of files from RAM or tape.

Scribe does not do underlining, superscripts or similar features that require embedded control codes. Scribe prints typical unjustified text at a speed of about 25 to 50 characters per second. Scribe is priced at \$29.50, plus \$2 for mailing and handling.

Chattanooga Systems Associates, P.O. Box 22261, Chattanooga, TN 37422; (615) 892-2339.

Flash-com for electronic mail: Flash-com is an integrated software package for implementing the U.S. Postal Services E-COM electronic mail service.

The package can work with other applications. It includes a mailing-list capability; built-in forms creation, management and file-handling abilities; E-COM transaction accounting and billing analysis; and dozens of ready-to-use business letters and forms. Flash-com retails for \$299.

Omni Computer Systems, Inc., P.O. Box 162, Chestnut Hill, MA 02167; (617) 825-6700.

MicroPro enhances CalcStar for 16-bit computers: CalcStar 1.4 now offers extended cell capacity when memory is added to a computer, as well as color implementation for the IBM PC and PC XT. The program's minimum memory requirement for 16-bit systems is now 128K rather than the previously required 160K.

For the IBM PC and PC XT equipped with a color monitor, CalcStar allows you to use different colors within a spreadsheet. Through its Auto command, CalcStar can enter an Automatic Form mode and lead a data-entry operator through the spreadsheet, automatically moving the cursor to predesignated positions that require routine data.

Other features include page scrolling, individual column widths that vary from 3 to 63 characters, precision adjustment up to 12 digits beyond decimal point, ability to merge several CalcStar spreadsheets to show combined totals, built-in scratch-pad calculator and files that are compatible with PlanStar and InfoStar.

CalcStar's extensive set of arithmetic functions includes Average, Minimum, Maximum, Count, Sum, Square Root, Log, Natural Log, Absolute Value and Exponentiation. In addition, CalcStar performs linear forecasting.

CalcStar is currently available for CP/M-86, PC-DOS and MS-DOS (including a specific format for the Texas Instruments Professional Computer) and retails for \$195. Update price for CalcStar is \$60.

MicroPro International Corporation, 33 San Pablo Avenue, San

Rafael, CA 94903; (415) 499-1200.

Make your IBM act like a DEC: Smartterm 100 enables an IBM PC to function as a Digital Equipment Corporation (DEC) VT100, VT101, VT102 or VT52 terminal, and to transfer ASCII or binary program and data files between the IBM PC and a host system, such as a mainframe computer.

With the new "smart" programmable-key abilities, you can set up a single key to automatically perform a complete file-transfer operation. In addition, a series of powerful new command sequences allow the host computer system to control the operation of the PC. The host system can now completely change the values of keys, initiate and control file-transfer operations between the PC and the host system and even terminate Smartterm 100. Another new feature is the on-line Help screens, which show the standard keyboard usage and layout and the key mappings for DEC's EDT full-screen text editor.

In addition to the standard monochrome and 80-column color-video boards, Smartterm 100 also supports the SuperVision 132-column monochrome-video board from California Computer Systems.

The file-transfer functions of Smartterm 100 allow you to store, on a disk file, data that is being sent to the terminal and to transfer either ASCII or binary files to the host computer without special host programming.

Smartterm 100 runs under any version of the PC-DOS operating system, and you can install it on a hard disk. It requires 128K RAM, one double-sided diskette drive, an asynchronous adapter and either a monochrome display or an 80-column color monitor. The list price is \$149.

Persoft, Inc., 2740 Ski Lane, Madison, WI 53713; (608) 273-6000.

Easy-to-use dictionary program: The Speller is a fast and easy-to-use dictionary program for the IBM PC and PC-compatibles. In less than a minute, you can check a 3,000 word document

against the 20,000-plus words in the Speller's dictionary. The program also refers to your own dictionary of commonly used words.

The menu-driven format makes finding and correcting errors quick and efficient. You can check words both in or out of context. The Speller's dictionary has been carefully checked for accuracy. The entries are real words — the Speller does not mix and match roots, suffixes and prefixes to make up words.

You can configure the Speller specifically to check spelling in files created by PIE:Writer, WordStar, Volkswriter and The Final Word, as well as EasyWriter's ASCII files.

The Speller runs on the IBM PC, Compaq, Corona, Eagle PC and Hyperion and requires a minimum of 64K RAM. List price is \$49.95.

Hayden Software, 600 Suffolk Street, Lowell, MA 01853; (800) 343-1218.

Hewlett-Packard releases more software for the HP-50:

The PFS software family from Software Publishing Corporation, Personal Business Calculator from the Hewlett-Packard Company and several games have been added to the list of software that can run on the HP-150 Touchscreen Personal Computer.

The PFS software family consists of four products: PFS:File, PFS:Report, PFS:Write and PFS:Graph.

Personal Business Calculator provides the functions of an HP-12C — you simply touch the numbers and functions on a screen resembling the HP-12C.

Three games are also available for the HP-150, all of which use HP Touch: Temple of Apsai and Ricochet, both from Epyx; and Type Attack, from Sirius Software.

Hewlett-Packard, 3000 Hanover Street, Palo Alto, CA 94303; (415) 857-1501.

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— Compiled by Barbara Borge

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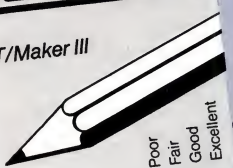
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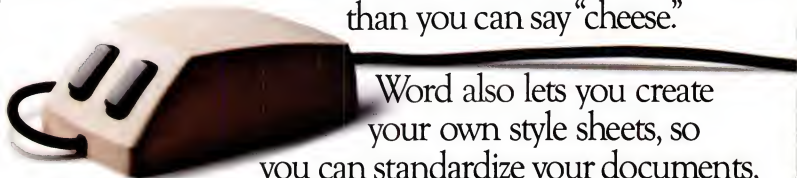
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Some manufacturers doubt MSX success in U.S.

BY BARBARA WIERZBICKI
Reporter

The highly touted MSX standard for home computers — developed by software publisher Microsoft of Bellevue, Washington, and supported by several leading Japanese manufacturers — may well be pronounced dead on arrival by the time it reaches American shores.

Japanese manufacturers, who are currently enjoying enormous success with the MSX machines in their own country, envision that MSX will become the worldwide standard for home computers. For months, the Japanese have been preparing to flood the U.S. market with several inexpensive 8-bit computers, whose MSX standard enables manufacturers to produce software and peripherals that are compatible with each others' machines. To date, the predicted flood has been a mere trickle, and experts question whether the MSX standard can penetrate the U.S. market at all.

The absence of MSX machines at the recent Consumer Electronics Show (CES) in Las Vegas, Nevada, was in marked contrast to the predictions of U.S. industry and Japanese manufacturers. Although Japanese officials had said that Matsushita was likely to unveil its machine at the trade show, the company displayed its MSX computer only in its hotel suite and not on the show floor.

"I was pretty surprised at the lack of MSX machines at CES," says Microsoft's Far Eastern business manager Ron Osogi, "because their popularity has been growing not only in Japan but in Taiwan, Korea, Hong Kong and Europe as well."

Although the reasons behind a delayed U.S. introduction are unclear, Osogi speculates that the MSX machines won't reach American shores until the Japanese market has been satisfied. "Japan was our point of entry. We want to work closely with them and firmly establish ourselves there."

Because the MSX standard's formal introduction last June took place in Japan, and because development efforts have been concentrated there rather than in the U.S., the U.S. market has been slow to accept MSX. "Many people think that MSX is just a Japanese standard. It's not, and our goal at Microsoft is to make more people in the United States aware that

MSX is an international standard," says Osogi.

The Federal Communications Commission (FCC) presents a second stumbling block for Japanese manufacturers, who are waiting for FCC approval of the MSX machines. By law, no manufacturer may sell a class B product, one for home use, until the FCC has approved it. So far, the machines haven't received the go-ahead, but MSX proponents feel confident that

the machines will pass FCC inspection by the beginning of May. They should then be ready to make a big splash at the CES in Chicago in June — in time for U.S. distributors to make their 1984 Christmas-buying decisions.

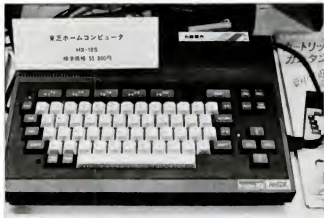
Another major problem for Japanese manufacturers is the noticeable lack of application software for MSX-based machines. Even though 150 software titles are currently on the market in Japan, relatively few software programs are available for use in the United States. Osogi predicts that a mixture of software — some designed by U.S. developers and some translated from existing Japanese programs — will be available in the U.S. in a few months. Yet he concedes, "Most American developers are waiting to see if the MSX standard will be adopted in the U.S."

Although the MSX standard is a supposed boon to software developers because it enables them to write one program that can be used on many machines, many U.S. designers are visibly reluctant to spend R&D time and money writing software applications for a standard with an uncertain future in their market. Several software firms, including Spinnaker, Activision and Sierra On-Line, that indicated last June that they would develop software for the MSX machines, now seem to have suspended such projects until the MSX standard establishes itself in the American market. "As soon as MSX becomes a viable standard, we're ready to go with it," says a spokesperson for Spinnaker.

The Japanese are having an even

tougher time persuading U.S. computer manufacturers to adopt the MSX standard. To date, Spectravideo, a computer maker in Plainview, New York, is the only American computer manufacturer to endorse MSX.

"It's just a matter of breaking the ice," says Spectravideo president Harry Fox, whose company will begin selling its first MSX machine, the SVI 728, this April. The SVI 728, which is basically an



The Toshiba MSX computer

internally adjusted version of the company's 328 home computer, will sell for \$349. The SVI 728 is a CP/M-based machine that features a full-stroke keyboard and has MSX Basic built into its read-only memory.

Current owners can upgrade their machines this May, when Spectravideo will begin selling a \$50 adapter for its 328 home computer that will bring the system into compliance with the MSX standard.

Fox predicts that once the MSX standard becomes widely accepted, home computers will become much like component stereo systems that work with each other even though they may have separate dedicated functions.

U.S. MSX backers, namely Microsoft and Spectravideo, maintain that the MSX standard will let users transform their home computers into legitimate, low-cost business tools.

Although the current MSX standard is aimed squarely at 8-bit machines, Microsoft is also counting on the standard to carry over onto 16-bit machines. The firm is developing a new disk operating system called MSX DOS, which will be compatible with CP/M-80 programs and will be able

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to address sound and graphics. The operating system is currently in prototype stages and is slated to be available in the U.S. this April. According to Osogi, users of MSX DOS will use commands that are virtually identical to those used on 16-bit MS-DOS machines. MSX DOS files will be compatible with those created by MS-DOS: Microsoft hopes this will encourage those who use MS-DOS machines at work to buy an MSX DOS home computer so they can use the same files at home.

Microsoft is also developing MSX versions of several existing software applications, which it will introduce in 1984, including MSX versions of Basic and Multiplan, as well as MSX versions of the Basic, Fortran and Cobol compilers.

For its part, Spectravideo is designing a disk system for all MSX machines that will support both CP/M-80 and MSX DOS. Spectravideo and Microsoft view the marriage of the two operating systems as a boon to their users. "One does not preclude the other," says Fox. "We are giving users the ultimate in flexibility because they will be able to use the best features of each operating system for both home and business use."

As well as the disk system that's targeted for an April introduction, Spectravideo is also working on a second-generation MSX machine code-named "The Sting," which it will unveil at the June CES trade show.

Fox promises that the MSX machines, accompanied by a full support system including peripherals and a plethora of software, will take the industry by storm

at the upcoming CES show. "The promise to the consumers and the threat to the hardware manufacturers that are ignoring MSX will finally come true this June," predicts Fox.

In spite of such proclamations, most hardware manufacturers are taking threats of the Japanese MSX invasion in their stride. "I think everyone is observing what's going on in the industry in terms of the level of penetration MSX will make in the U.S.," says Coleco spokesperson Barbara Wruck. Coleco, like most American computer manufacturers, is not yet committed to the adoption of a standard whose acceptance in the U.S. is still questionable.

Commodore spokesperson Steven Greenberg echoed those sentiments in a much stronger vein. "Why adopt a standard that there's no software for? They're grasping at straws," Greenberg says.

Perhaps, according to some observers, MSX can't succeed in the U.S. because the cooperative spirit embodied in the MSX standardization attempt is diametrically opposed to the American philosophy of free enterprise. "U.S. manufacturers are alarmed that the home-computer market as a whole may not be viable. They must be nonstandard in order to survive in a very unstable market," says Ken Bosworth, president of International Resource Development in Norwalk, Connecticut. "It's best off not to be compatible with other manufacturers. The U.S. market cannot support a large collaborative group of that [MSX] nature." ●

Machine utilizes both Apple, CP/M software

BY DENISE CARUSO
Reporter

A computer that can utilize both Apple and CP/M software — and that can fit into a briefcase — is the answer of Data Technology Industries (DTI), of San Leandro, California, to the steady market for CP/M add-ons to the Apple II.

"This machine is a product the market has been crying about for years," said William F. Chamberlain, president of DTI. "It acts as a bridge between the business world and the games and home-computer world by having access to all the different categories of software available."

Chamberlain added that users can play games on the machine, which is called Assistant CPe, and can also use it with

programs that run with CP/M.

Jeff Clayton, director of sales for DTI, describes the Assistant CPe as an Apple IIe "work-alike," meaning it does not copy any of Apple's proprietary codes, although it acts like them. Clayton said that the



The Assistant CPe from DTI

machine, which costs \$895, is aimed toward the home-computer market. The price includes a separate power supply; two processors, the Z80A and the 6502; 64K of random-access memory (RAM); and 24K of read-only memory (ROM). Including the power supply, the unit weighs 14 pounds.

"The CPU and one drive would fit into a standard briefcase and could plug into a TV somewhere," said Clayton. "In fact, when I travel with it, I put the CPU, two drives, all my disks and the power supply in a salesman's case." He said that one drive, a power supply and the CPU fit inside a standard attache case.

The Assistant CPe includes an enhanced-Basic interpreter and an automatic start-up diagnostics test, as well as a full, 68-key alphanumeric Selectric-style keyboard and 12-numeral keypad with four

The Assistant CPe includes two processors, a separate power supply, 64K RAM and 24K ROM.

separate function keys for monitor, help, graphics and alpha-lock. The computer registers 52 uppercase letters and 26 semigraphic symbols.

DTI has included ten different slots for attachments: a monitor jack; a switch for 40- or 80-column display; a television/radio-frequency output jack; red-green-blue output jack for high-resolution monitors; audio-cassette in/out port; interface for one or two Apple-compatible, 5¼-inch disk drives; Centronics-compatible parallel-port interface for printer; joystick or paddle connector; and expansion slots for two additional, Apple-compatible cards.

For \$1,595, said Clayton, the Assistant CPe comes with all the above features, as well as two disk drives, a green-screen composite-video monitor, a word-processing program, CPM 2.2, a relational database-management program called Probase and a personal-management system written in Probase.

Both versions support a variety of languages, including MBasic, CBasic, Cobol 80, Fortran 80, UCSD Pascal as an add-on card, Forth and PL/I-80. They will also run programs written for Apple's DOS 3.3.

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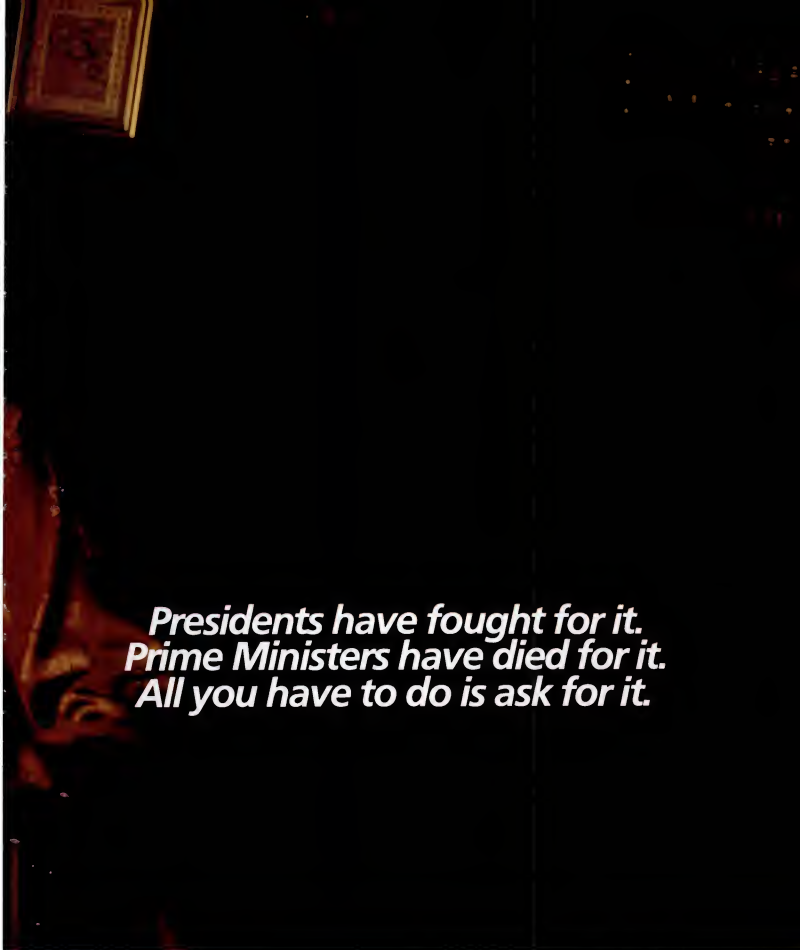
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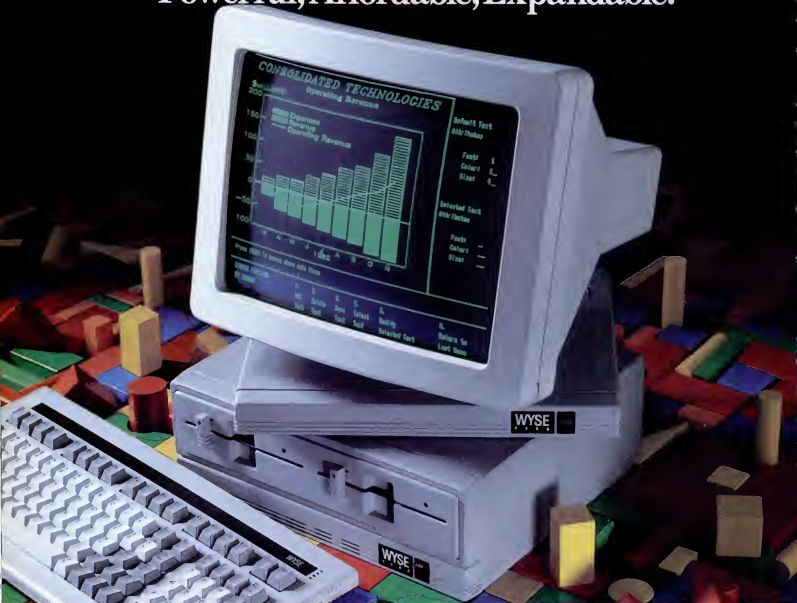
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Review: QuadDisk

BY FRANK J. DERFLER

Contributor

Adding a hard-disk drive to your IBM Personal Computer can improve its efficiency and make some resource-intensive applications, such as office accounting and inventory control, practical. The QuadDisk from Quadram, an add-on Winchester-disk system for the IBM PC, will do a lot for your system.

(The term *Winchester*, often applied to certain hard-disk drives, was coined when the first of these drives was developed for the IBM 3030 computer system. The Winchester 30-30 carbine, for those of you who have never read Zane Grey, was a common saddle rifle in the Old West.)

The QuadDisk systems are available with storage capacities of 6, 12, 20, 27 and 72 megabytes. The 6-megabyte drive comes as either a removable hard-disk cartridge or a more conventional fixed disk. The removable cartridges are valuable if several people who bring their own data want to use your system or if you want to exchange large amounts of data between IBM PC systems quickly.

Most add-on hard-disk systems use external cabinets to hold either the hard disk, the power supply needed to run the hard disk or both. The QuadDisk installs completely within the IBM PC — it requires no detached cabinets.

The standard IBM PC can't supply the electrical current needed to run a hard-disk drive, so the engineers at Quadram have designed a power-supply module that attaches to the back of the IBM PC near the monitor power plug. This added power supply runs only the disk drive. It sticks out about three inches behind the IBM PC, but this is the same clearance as you normally need when you plug in cables and connectors.

The QuadDrive installation kit includes a hard-disk-controller card that fits into an expansion slot near the disk drives. The kit also comes with software that enables some older IBM PCs to "talk" to the new hardware. The software gives you a well-organized menu display that makes it easy to use some of the more powerful DOS 2.0 and 2.1 commands.

In our evaluation of this product, we considered both the performance of the hardware and the performance of the software in our final ratings, since the

software supplied is essential to the basic operation of the disk in many cases.

We installed and tested the 12-megabyte version of the QuadDisk, using a fixed-disk drive. If you are interested in the removable-cartridge system, note that the instruction manual cautions you to let the cartridges reach room temperature if they are coming from a cold environment. The tolerances involved are tight, so perhaps you should test the removable-cartridge system you want before you decide to buy it, to make sure the fit is not

too tight.

The disk we tested was well designed and reliable. The added power supply was cool to the touch, and the controller board generated a normal amount of heat. The disk drive was relatively quiet — though no Winchester disk drive is even close to being silent — and worked as advertised.

The integrating software supplied with the QuadDisk provides a display that contains much information about the disk and its files, as well as a menu of commands. You can see a directory of files on a diskette, and you can use the menu to copy and erase files and run programs — a particularly useful feature. The Quadram utility allows you to make full use of the multiple-directory concept available in PC-DOS. The advantage of using a disk that can store so many files is that you can easily locate a file you want to see without combing through all the many files on the disk.

The QuadDisk is essentially an upgrade kit for the IBM PC. You'll need a Phillips screwdriver and a small wrench or nutdriver to install it. No soldering is required, and no special technical skill is needed beyond the ability to use these two simple tools.

The installation process has three major sections: power-supply attachment, hard-disk installation and insertion of the disk controller. The entire process should take less than an hour, even if you read the instructions several times before you start.

The hard-disk power supply securely bolts to the back of the IBM PC chassis. The only trick is that you must insert a spade lug under a screw so that the shield of the power cable is grounded to the chassis.

You insert the hard disk into the chassis in the right disk-drive slot and secure it with three screws. If you use the removable-disk cartridge, you have to install a separate mounting bracket to support it. This process takes a little longer than the installation of the larger drives, but it is not difficult.

Installation of the disk controller consists of inserting the controller board in one of the expansion slots close to the disk drives and routing the cables to the rear of the drives. There are two parts of this procedure with which you should be careful: First, don't rub the cable over the



QuadDisk



	Poor	Fair	Good	Excellent
Setup	☐	☐	☒	☐
Ease of Use	☐	☐	☐	☒
Performance	☐	☐	☒	☐
Documentation	☐	☐	☒	☐
Serviceability	☐	☐	☒	☐

Summary: The Quadram QuadDisk system provides a relatively simple and low-cost way to add large-storage capacity to your IBM PC. The system should provide reliable service, and its installation is not difficult. The QuadDisk operates under the latest version of the PC-DOS operating system.

Product details: List price ranges from \$1995 for 6-megabyte version to \$6500 for 72-megabyte version. Tested (12-megabyte) version priced at \$2250. Available in 6-, 12-, 20-, 27- and 72-megabyte versions for IBM PCs. Manufactured by Quadram Corporation, 4357 Park Drive, Norcross, GA 33093; (404) 923-6666.

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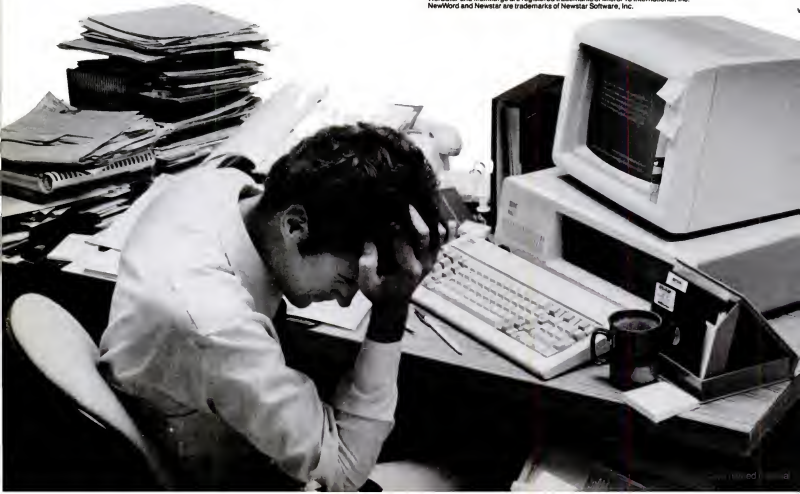


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HARDWARE



The Quadram Corporation warrants its QuadDisk for one year from date of purchase.

two banks of switches on the computer-system board. These switches move easily, and you can set an improper operating condition into the system with a slight twitch of the cable. Second, make sure that the power and control cables are securely plugged into the disk drive. A loose connection can lead to intermittent

**The QuadDisk unit
provides you with
a simple way to
enlarge the disk-
storage capacity
of your IBM PC.**

operation or no operation at all.

Aside from these elementary precautions, the installation of the QuadDisk is a simple process that you can handle successfully if you follow the instructions and work at a reasonable pace.

The hard-disk drive is the IBM PC's drive C. If you only have one floppy-disk drive in the system, you can use Quadram's QuadDrive software to install an electronic random-access memory (RAM) disk that you then address as drive B. An electronic RAM disk is actually a portion of the IBM PC's generous memory that you reserve for storage. We found that the RAM drive was faster than the hard drive for programs with overlays and

when we made frequent disk searches. It is also nice to have another drive in which you can tuck away a few files when you are reformatting diskettes or making frequent disk copies.

The 55-page manual is marked "preliminary copy," although it is complete. The installation instructions are simple, but there are no illustrations to accompany them.

The instructions for the software are illustrated and include diagrams of key functions and drawings of the Function menu.

The QuadDisk manual does a good job of explaining how to check and adjust the switches on the IBM PC System Board. The instructions clearly tell you what the switch settings should be for the number of drives you have in your system.

The manual includes a section on troubleshooting and special sections containing technical data necessary for reformatting the disk or performing other major system adjustments.

The Quadram Corporation warrants its products for one year from the date of purchase. You have to return the system to Quadram or your dealer to exercise the warranty. The modular nature of the QuadDisk system may make it easier to return only parts of the system if you can isolate the problem.

Quadram burns in every part of the hard-disk system. This process, which results in good quality circuitry and wiring, should eliminate most initial failures.

All in all, we were satisfied with the QuadDisk unit. It is a simple and inexpensive way to add large amounts of disk-storage capacity to your IBM PC. It will prove a reliable unit for those who need to keep a great deal of information on hand. ●

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Review Responses

Ace 1200

From the very first sentence, your review of the Franklin Ace 1200 (December 26/January 2) reveals your lack of understanding of this product and failure to ascertain the most basic details regarding its functions. I would suggest that the Apple IIe was Apple Computer's response to the Franklin Ace 1000, a system which provides more value for less money than the competition.

With very little effort you could have learned that the labels on the numeric keypad are provided as dedicated function keys for use with WordStar, one of the many enhancements included in the Franklin 1200 OMS configuration. Because these keys allow one-stroke control-character sequences, they do provide potential convenience in the use of other software packages, as the manual suggests.

As for software compatibility, I have yet to find an Apple program that does not function on the Ace 1200 or 1000.

This hardware review spent as many words discussing the lack of documentation for CP/M and Applesoft Basic as it did in commenting upon the features and performance of the system as a whole. I wish every system's documentation which received only a Fair rating from *InfoWorld* could be described as "attractively presented," with "too much detail," because the authors "explain too much."

As a consultant with more than 12 years of data-processing experience, I depend on *InfoWorld* to make life a little easier. Better luck next time.

Steven C. Tanzola
President
Tanzola Systems Group
Berwyn, PA

Your review of the Franklin Ace 1200 reveals that you do not understand the market at which this machine is targeted. Consequently, some of the criticisms are misdirected and the strengths of the machine are slighted.

The Ace 1200 is not simply a slightly different Apple; rather, it is a computer for the serious professional or business user. Thus, it comes standard with CP/M, the standard 8-bit business-oriented operating system, running on a CPU three times as fast as that usually dropped into

Apples. The disk drives are built-in, as they are on virtually all business computers, not flopping about the desk, as is customary with hobbyist machines. It has a built-in 10-key number pad so that this necessary part of a business computer does not have to be added as an afterthought, also to be left flopping around on the desk.

The special functions available on the 10-key number pad work perfectly with the world's most widely used word processor, WordStar, and will also work correctly with a number of other CP/M programs that have adopted the same cursor control codes. Of course, with a product like Smart Key, they could be made to work for any program.

For the business or professional person who needs a business computer and wants one that can also be used by the family for game or educational programs, the Ace 1200 is a superior machine. It does have one serious flaw, however, the lack of good documentation, as you noted.

The real limitation of the Franklin for the professional user is the very limited capacity of the Apple-format disks (128K RAM). These are marginally satisfactory for word processing but woefully inadequate for data-base work. An inexpensive, double-sided, double-density 8-inch disk drive and controller would do wonders for this machine, as would a hard disk.

Marick Payton
Redwood City, CA

You belabor a few minor deficiencies of the Franklin Ace 1200 while ignoring many advantages that would interest most readers. The Ace 1200 has one of the few true IBM Selectric-style keyboards available on a micro. With eyes closed, a typist can move with ease from typewriter to computer. Even at this late date, the Apple IIe is nonstandard.

For years people have wrestled with the clutter of external cables and disk drives in the Apple II. The Ace 1200 has eliminated this problem, making room for up to two drives internally mounted.

One of the most significant features offered on the Ace 1200 is the CP/M card that runs a Z80B at 6 MHz, providing the fastest CP/M available on any Apple-compatible. On this important feature, you did little testing of CP/M.

The review ignores numerous other

features of the Franklin Ace 1200. The popularity of Franklin computers in schools, businesses and homes has resulted from an excellent product and many well-informed dealers and users. It is disappointing that you ignored so much.

James A. Alinsky
Michigan City, IN

Dvorak keyboard

Please tell the marketing departments of the giants in personal home computing that the first home computer that is manufactured with a Dvorak keyboard will get my money.

I'm a lawyer who would enjoy the feedback of viewing documents I prepare immediately. I don't have the time to learn to touch type on the standard keyboard, so it still makes sense to have my secretary do the typing.

But if Apple, IBM or Commodore put out a machine that allowed me to two-finger faster, I'd buy it along with a word-processing package *tout de suite!*

Harry Peters
Winnipeg, Manitoba, Canada

A number of companies have already produced Dvorak keyboards that you can use as replacements for the keyboards that are supplied with personal computers. Perhaps these will fill your need. — Editors.

Have you heard?

Have you thought about reviewing the new Timex/Sinclair 2068 Color Computer? It's a great computer for the money and could be stiff competition for Commodore and Atari. It has a better keyboard than the IBM PCjr! Sound and color too!

Jeff Rottman
San Angelo, TX

We are impressed, too. Our review of the Timex 2068 appeared in our December 19 issue. — Editors.

InfoWorld welcomes comments about its hardware reviews from both readers and manufacturers. We hope this page will serve as a forum for discussion of the hardware industry and the improvement of hardware products. Please address your correspondence to the Technical Editor, InfoWorld, 1060 Marsh Road, Suite C-200, Menlo Park, CA 94025.

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New Products

Two colors, one board for IBM work-alikes: Owners of the IBM PC, PC XT and "work-alikes" can purchase a single display card that provides a color-display controller, monochrome-display controller and printer interface.

Paradise Systems is now manufacturing the Paradise Multi-Display card, which it says is compatible with "virtually all" IBM PC software, including the ability to fully support Lotus 1-2-3 using two displays.

The card sells for \$595 and features flicker-free scrolling, separate connectors and a switch that allows users to decide between monitors. You can also use software to switch between monochrome and color.

Jeff Frankel, product marketing manager at Paradise, said that the product gives users an additional expansion slot for future enhancements — in the past, you required two expansion boards to obtain the same level of video support that MultiDisplay provides.

The MultiDisplay card is sold through retail distributors. It has a 90-day warranty and is backed by after-sales support.

Paradise Systems, Inc., 150 North Hill Drive, Brisbane, CA 94002; (415) 468-5320.

Popcom modem does voice, data: The Popcom Model X100 modem from Prentice Corporation permits you to switch between voice communication and data transmission without the need for separate telephone lines for the two functions. Capable of transmitting data at 1,200 bits per second, the X100 is compatible with the Bell 103, 113 and 212A standards for modems.

The modem, which is supplied as a free-standing unit for connection to an RS-232 serial port, can detect dial tones, busy signals, remote ringing, voice, data and line-disconnection signals. You can install the package on a wall, as well as a desktop. It has no switches or indicator lights and utilizes a "smart" RS-232 connection to adjust its wiring scheme to that of the transmitting computer.

Price of the unit, scheduled to be available in quantity late this month, is \$475.

Prentice Corporation, 266 Caspian Drive, P.O. Box 3544, Sunnyvale, CA 94088; (408) 734-9810.

Disk drives for Apple II small, self-contained: A floppy-disk-drive unit for the Apple II computer, containing two half-height 5¼-inch 140K RAM drives, holds both units in a single case. The unit, from Apple Computer, is designed to sit on top of the Apple II system box.

The unit, dubbed Duodisk, is also priced lower than two separate Disk II drives.

Technical improvements in the drives, according to Apple, include a new disk-ejection mechanism and an advanced head-positioning mechanism that permits you to read in information stored on so-called half tracks more precisely. The product is supplied with a controller card that allows you to connect it to any Apple II, II Plus or IIe computer. It is compatible with all software that can run on the Disk II units.

Price of the unit is \$795, as compared to the \$940 suggested price for two Disk II units. Available at authorized Apple dealers, the product is warranted for 90 days and can be purchased with an additional service plan.

Apple Computer, Inc., 10260 Bandley Drive, Cupertino, CA 95014; (408) 996-1010.

Thermal printer can use variety of papers, vinyl: Fujitsu America's TTP16, a 16-dot thermal-transfer printer, is capable of producing images on paper and surfaces other than the normally costly thermal paper required by such units. The printer can make use of plain paper, envelopes, labels and vinyl articles such as plastic bags and overhead-

viewgraph sheets.

The 16-dot printhead provides a resolution of 1/120 × 1/120 inches in a single pass. A precision positioning feature is designed to provide high-tolerance alignment and near letter-quality printing at 45 characters per second. The printer operates quietly because all moving parts are driven by stepper motors and the printhead does not strike the printing surface. Noise level for the unit is less than 50 decibels, according to the manufacturer.

The printer can tab horizontally or vertically, and sensors alert you if the printer lacks paper or ribbon. Ribbons are available in black, yellow, magenta and cyan. You can obtain multiple color printing by overprinting.

The 4.7 × 14.2 × 10.8-inch printer weighs 11 pounds. Suggested retail price for the serial or Centronics-type parallel model is \$625.

Fujitsu America, Inc., 3055 Orchard Drive, San Jose, CA 95134; (408) 988-8100.

Expansion unit for IBM PCjr: An IBM PCjr expansion box, which will be available late this quarter from Legacy Technologies, will be capable of powering an additional floppy- or hard-disk drive. It will also accommodate memory expansion to 512K RAM.

The Legacy unit uses an 80-pin connection, the first 60 pins of which are identical to the pins on the PCjr. The additional 20 pins are provided to allow control and synchronization of coprocessors, expanded interrupt capabilities and connection of special devices. The expansion bus of the unit has four slots.

The unit's cabinet is styled after that of the PCjr and can sit on

top of the PCjr system unit. In March the manufacturer will sell a Qume half-height disk drive and memory expansion card to plug into the unit. A clock/calendar, parallel interface, serial interface and hard-disk drive are also planned.

Legacy Technologies, Ltd., 1414 O Street, Suite 100, Lincoln, NE 68508; (402) 475-7257.

Internal modem for Kaypro computers: A 330/1,200-baud internal modem designed to plug into Kaypro computers is compatible with the Hayes Smartmodem, according to its manufacturer, Datasolvers.

You can install the DS1200SMT in any Kaypro II, 4 or 10 computer, and installation involves no drilling, soldering or modification of the machine. The modem is also easy to remove, if desired. You can connect it to any direct-dial telephone line, and it uses the same commands as the Hayes 1200 modem.

The modem retails for \$427.50 and has a 90-day warranty.

Datasolvers, Inc., 440 Maple, Wichita, KS 67213; (316) 264-5068.

Amber display for IBM PC: A replacement picture tube for the IBM PC converts the standard green screen to an amber one, according to the manufacturer, Langley-St. Clair. The Soft-View CRT uses the European amber phosphor and includes an antiglare etched faceplate and lead-strontium-impregnated glass to block X rays emitted by the CRT.

The products are direct replacements, both electrical and mechanical, for the original IBM tubes: You don't need to modify the monitor to accommodate the Soft-View CRT. Installation takes 15 minutes. List price is \$99.95.

Langley-St. Clair Instrumentation Systems, Inc., 132 West 24th Street, New York, NY 10001; (212) 989-6876.

Specifications for products described on this page are supplied by the manufacturers or firms marketing these products. InfoWorld does not guarantee their accuracy.

— Compiled by Barbara Borgel



The TTP16, a new thermal printer from Fujitsu America

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Computer books still selling like hotcakes

BY MARGUERITE ZIENTARA

Senior Writer

Computer books sold surprisingly well during the Christmas season, to the delight of publishers and bookstore owners, who must be wondering how long their good fortune will last.

"Computer books have sold spectacularly well," reported Sam Safran, the computer book buyer for the Waldenbooks national chain. His observation that the real winners were machine-specific books — especially those concerning the Com-

The leading computer book publishers put out almost 900 books last year.

modore 64 — was echoed by other industry figures.

Computer book publishing seems to have eluded the shakeout affecting much of the personal-computer industry, though some publishers privately say that they expect a downturn within two years. In the meantime, publishers and bookstore owners are taking full advantage of the continuing demand.

For publishers, that means increasing by as much as three times the number of computer books they plan to publish this year. For bookstores, it means moving computer books up to the front of the store and sacrificing some of the space previously devoted to other categories.

With almost 900 titles published last year by the 12 leading computer book publishers, 1984 could well prove to be the year of the computer-book glut. Output from the leading publishers is expected to increase by about 550 titles, or more than 73% overall, according to the *Computer Publishing & Advertising Report* (CPAR), published by Communications Trends in Larchmont, New York.

One firm planning more titles is



1984 could well prove to be the year of the computer-book glut.

Howard W. Sams & Company of Indianapolis, Indiana, which published its first computer title back in 1967 and last year released 85 titles, making it the third-largest publisher of computer books.

"We've been increasing our computer books for the last three years by about 70% to 80%," said Dennis Collins, advertising and public relations manager. "One of the reasons we've increased our title output is because we perceive that the market is strong enough to warrant this kind of variety in titles."

"A publisher has two options: to believe that the bigger volume you produce, the more likely you are to be successful, or to fine-hone your marketing efforts and have fewer titles that are guaranteed to be bigger hits each time. Right now the market is wide open, from low-end machines to high-end productivity and business-level computers," Collins said. "When the hardware manufacturers are reduced to only four or five companies, that will limit the number of areas to write books about."

A manufacturer's demise does not necessarily mean the evaporation of interest in its products.

Even though Texas Instruments' Home Computer division went down the tubes last fall, books about the TI 99/4A are among the current best sellers, along with those concerning the Commodore 64 and the Vic 20, according to Waldenbooks' Safran.

"Because TI got out of the market, there's not that much material out there," observed Merl Miller, chairman of dilithium Press in Beaverton, Oregon. While publishers are not producing many new TI books, the ones on the shelves are still selling. "People are worried about whether they're going to be able to find anything about their machines, so TI still seems to hang in there," Miller said.

Atari, however, is another story. With the fate of its parent company, Warner Communications, hanging in the balance, Atari is "a big question mark" for publishers, explained CPAR editor and publisher Efram Sigel. "They don't know

what to do about it." Waldenbooks had low sales on Atari-related books.

The industry is wary of Coleco's problem-plagued Adam. "Any books coming out of, say, Coleco, referring to the Adam, we're looking at very, very closely and approaching very cautiously," said Safran.

In January — the traditional month in which stores unsold books back to publishers — not every publisher enjoyed low numbers of such returns. "Everything sold real well this year, but I think we tended to get the machine-specific books back more," said dilithium's Miller. "I think a lot of bookstores tended to load up on machine-specific books rather than general books because they expected high Christmas sales of computers. But I think there were still more lookers than buyers

software is the "very significant success" of some of the software/book combinations now selling, Ochsenreiter said. "In fact, we've had some titles that would appear on our trade book best-seller list if we were able to put software on the list."

The most successful combination packages to date for Waldenbooks has been a series of six titles from Howard W. Sams & Company, priced at \$11.95 to \$19.95, that include a book and a cassette, he reported. "They have generated very strong sales. We sold out in most stores within a few weeks, so it's very clear that this is a bona fide area for us to be in."

Howard W. Sams & Company's book/software combinations have had an "extremely high level of success" in the last quarter, Collins said. "Our indication is that they will really take off, and I think

computer books.

"Certain publishers will be recognized only as computer and technical publishers no matter how good a technical book may be, so that certain titles will appear only in the computer section and therefore can never make *The New York Times* Best Seller List," he said.

Miller of dilithium Press agrees. "I don't think you'll ever see a computer book on the Best Seller List," he said. "The literary types who make up the list for the most part don't like computer books. There have also been a lot of cookbooks and exercise books that have sold millions of copies that never showed up on that list."

In addition, some books in the computer section don't belong there to begin with, he said. "If you have a computer book or software program that teaches you how to make money in real estate, it really belongs in the real estate section. Right now it would end up in the computer section, which is totally inappropriate."

Not everyone in the industry agrees. "I'm not sure *ghetto* is the appropriate word," said Larry Levitsky, associate marketing director for Microsoft Press in Bellevue, Washington, which is about to become a new entrant in the computer-book-publishing fray.

"Most stores now would give up other categories for computer books, which in some cases comprise 10% of the total volume of a store," Levitsky said. "Also, a lot of stores are bringing the computer-book section up to the front of the store, with more prominent displays in the stores."

Like any new category, it takes a few years to be recognized, he said. "If computer books maintain the volume and the respectability they have now, I think that will change."

Waldenbooks' Safran concurred that computer books are getting the spotlight treatment. "Perhaps two or three years ago that would be the case, with a very limited computer section, but it's not the case now," he said.

"Here the true criterion of a Waldenbooks best seller is unit sales," Safran said. "So if we happen to sell more Commodore 64 books one week than James Michener, it makes no difference to the Waldenbooks best seller list whether it's a computer book or a major historical or fictional piece of literature. What *The New York Times* does with the information from different accounts, that's a completely different story."

CPAR editor Sigel agrees that computer books often make the chains' best seller lists. "I don't see it as an issue," he said, and noted "every now and then a computer book will make *The New York Times* Best Seller List." ●

'Any books coming out of, say, Coleco, referring to the Adam, we're looking at very, very closely and approaching very cautiously,' said Safran.

of computers this year, so the good general books seemed to sell real well."

What was most likely to come back? "Anything on the IBM PC," Miller reported. Again, it was a matter of overstocking. "When book sellers see that books on the IBM PC sold really well in September and October, they think it will sell really great in December. But in reality it won't sell any different in December than any other part of the year. So they tend to overstock, anticipating it's going to go up because everything else will go up."

One possible threat to computer-book sales is the entry of software into bookstores. "As we begin to expand the amount of software we carry, there is a limited amount of shelf space and it's got to come from somewhere," remarked Glenn Ochsenreiter, Waldenbooks' software buyer. "So while they are coexisting peacefully right now, it will be an issue in the future."

"In a lot of stores, we simply carry more titles as long as the titles generate successful sales," he said, "while in some stores we are at the limit. When we put additional software in, it's going to have to displace some books."

"We're in the process of learning to what extent we're going to be successful with software and how fast we're going to be able to expand our selection of it."

One clue to the future of bookstore

a big part of that is the packaging concept as well as the installed base of the computers those programs are geared to — the low-end TI-99, Vic 20 and Commodore 64 computers.

"The people in those marketplaces, especially the Commodore 64, seem to have an incredible appetite for books and software. I don't know how long it will last, but it's certainly a much more volatile market than the long-term IBM and Apple marketplace."

Prentice-Hall's book/software combinations are also doing extremely well, according to Michael Hunter, president of the general publishing division, which is responsible for computer books. "Our sales were up about 200% in 1983," he said. "We don't expect that to happen again in '84, but we'll probably double our computer-book sales in '84."

With all this frantic buying and selling, one may wonder why these computer books aren't topping *The New York Times* Best Seller List week after week. "In terms of volume, I think the number 10 book on *The New York Times* list probably still sells three times as well as the number one computer book," said Collins.

Computer book author Steve Ditlea, who wrote the recently released *Osborne/McGraw-Hill Home Computer Software Guide*, believes the situation can be traced to what he calls the "ghettoization" of

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Q&A: Merl Miller

By KATHY CHIN

Reporter

One of the pioneers in publishing computer books for novices, dilithium Press, was started by board chairman Merl Miller, an ex-fighter pilot in the Marine Corps, and owner of Matrix textbook publishers. It was named dilithium, says 41-year-old Miller, after the dilithium crystals that fueled the Starship Enterprise in the popular TV series "Star Trek." "We knew a lot of people in the computer industry were Trekkies," says Miller.

The idea to publish computer books for nontechnical types took seed in 1976 when Miller obtained an Altair microcomputer that came with extremely difficult documentation. After calling a friend repeatedly to ask how to operate the machine, Miller suggested that they combine their questions and write a book. *Two to the Tenth Questions and Answers about Home Computers*, published in 1978, maintained a satisfying shelf life of five years.

Since 1977, dilithium Press has leapt from \$38,000 in sales to \$5 million in 1983. To date, the firm has published over 80 beginner books with such nontthreatening titles as *Computers Aren't Scary Anymore*, *Computers for Everybody* and *How to Buy Your Own Computer*.

How do you determine how simple the information in your books can be, without insulting the reader's intelligence?

I don't think you can make it too simple. The standard for general-circulation magazines and newspapers is to write for the eighth-grade reading level. We try to write at the same level. If you make something clear, lucid and understandable, then it's not talking down to people. But we have had criticism that our books are too simple. *The New York Times Book Review* said our books were too simple and were great for people in Iowa. We like publishing books for people in Iowa.

We've noticed that on the majority of your books, there are dual credits: your name and someone else's. Some people say you don't do the writing but just the editing. Is that true?

All the ones that have my name on



Merl Miller, chairman of dilithium Press

them, I've written. I've written nine books for dilithium. Most of the books I write, I coauthor with Jerry Willis. We have 80 other authors that I have nothing to do with. We don't put a person's name on a book unless that person has written it.

Can you explain why the majority of your books have two authors?

One of the things that we have discovered with technical books is that it's hard for one person to know a field. Many times in the computer field, you tend to get so involved and wrapped up that you forget what it's like for the neophyte. I would be leery of anyone who would write his first book on his own without a coauthor.

How much are people willing to pay for a computer book?

We did one book in hardback because it was a history of the computer industry and, unfortunately, it didn't sell like we hoped. We sold 20,000 copies of the computer buyers' guide in three months, at \$20 each. It's not so much the issue if it's a paperback or hardback, but the important thing is: does the book deliver the value for the money? Our buyers' guide is 600 pages long. There are two ways to learn about a computer. You can buy a \$50 computer, or buy our \$20 book on computers and you'll learn more.

What is the shelf life of a book? And how do you keep on top of the industry?

I subscribe to 50 magazines and have a huge research staff. As for the shelf-life

question, some books naturally have a long shelf life. If you have a book on programming, you can bet it will have a long shelf life. The basic fundamentals on programming remain the same. But we get around the shelf-life problem by limiting the print run, publishing frequent updates and keeping it at a very simplistic level.

Is it true you've recently entered the software business?

We've been publishing software since 1978. Last year we started putting a disk in a book. Our best-selling package is More Than 32 Basic Programs for the Commodore 64. It's sold more than 70,000 copies. Our goal is to get software down to the same price as books in the \$10 to \$20 range.

Last year there were a number of major computer book deals signed such as *The Whole Earth Software Catalogue*, worth \$1.3 million. Are the days of the big book deals over?

I think it reached its peak last year. I think what publishers have found is that computer books are not like novels. There's a real easy way to throw away a lot of money in a hurry and make some really big mistakes. A technical book has got to be well written and informative, hopefully witty. It has to have good illustrations. But more importantly, it's got to be technically accurate.

I think it's a big mistake for a mass-market publisher to go out and sign up anybody who claims he can write a book.

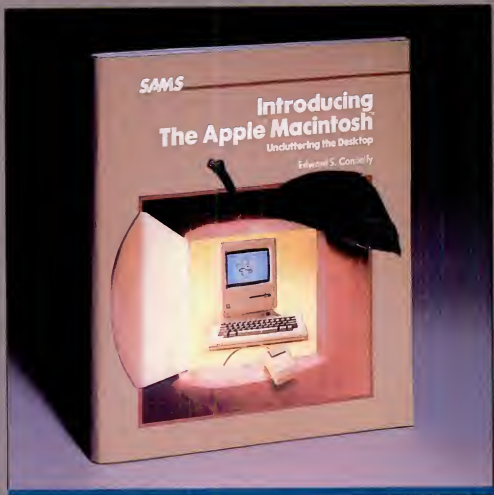
Now that a swarm of publishers are entering the computer market right now, how has your marketing strategy changed?

Originally we advertised strictly in computer magazines. We tried to push the books in computer stores. Then we started selling to bookstores in 1979. Now, we sell 95% of our books in bookstores and 5% in computer stores. We no longer advertise in the more technical publications like *BYTE*. We do the big bulk of our advertising budget in *People*, *Time* and *Business Week*. We are following the same path with our software.

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BY JOHN GANTZ

Contributing Editor

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Well, I've got the perfect cop-out for you. It's a company with a hammerlock on its main market, a great balance sheet and growth history and the ability to kick teeth in the personal-computer market.

It's Wang Labs, a company that will sell over \$2 billion worth of office automation gear this year, a company with probably close to a quarter of a million systems out there, a company with more Fortune 500 desktop real estate than all but IBM and AT&T.

My warm feelings for Wang go back almost a decade, to the summer of 1975. En route with top management (absent only the redoubtable Dr. An Wang himself) to a lunch during which it was to be argued that Wang was a company with a destiny and thus should be taken seriously by my employer, International Data Corporation, the PR guy's car broke down. When the senior vice-president of manufacturing calmly stuck out his thumb and began a group hitchhike, my conversion began. Maybe this company *did* have a future.

Certainly, if I'd invested in Wang back then, I'd have made out well. A thousand bucks invested that day would be worth over \$100,000 today.

John Gantz is editor of the Tech Street Journal, an executive newsletter on high-tech stock market and business performance. The newsletter is published by Technology Financial Services, which is registered with the SEC. The opinions expressed herein are those of the writer, not necessarily of InfoWorld.

In fact, the stock history of the company looks quite nice. According to a financial type at Wang, an investor who'd stuck by the company would have seen the following return:

Wang Stock Appreciation			
Dollar Invested on Jan. 1	Worth Year End	Worth 12/31/83	
1977	\$1.88	\$45.60	
1978	\$2.49	\$24.25	
1979	\$2.30	\$ 9.75	
1980	\$2.44	\$ 4.24	
1981	\$.81	\$ 1.74	
1982	\$1.77	\$ 2.14	
1983	\$1.21	\$ 1.21	

You can't even just chalk it up to inflation. During the last five years, adjusted for inflation, Wang stock has appreciated fivefold.

But can it keep it up? Can a \$2 billion corporation stop itself from getting hidebound?

I think so, for several reasons:

• **Management:** The company has handled phenomenal growth for over a decade. It is *not* a one-man show, despite the fact that its founder is still aboard as chairman. Few would argue that it is not a well-run company.

• **Philosophy:** Wang's products tend

• **Word-processing software:** If not the best, it's the best that's well known. And word processing is the number 1 application on personal computers. How else can you explain the fact that Softword System's Multimate, which mimics Wang software, is now a top-ten best seller?

• **Account control:** Wang already knows many of the corporate personal-computer buyers, either through their purchase of clustered word processors or of minicomputers. Wang does not sell and run, having been through the service and support fires several years ago when product shipments burgeoned. Lost sales then means Wang is smarter now.

• **Technology:** From the days when Dr. An Wang helped invent core memory, Wang technology has held up well. Its busts — a copier/printer, the Wangwriter, its local network — have been more related to misreading the market than weak technology. By entering the personal-computer market late, Wang has been able to avoid the mistakes of pioneers. It has recently committed itself to open architecture and IBM PC compatibility.

The company also looks good financially — current assets outweigh current liabilities by a factor of three, long-term debt is manageable, stock price is but five times book value.

A pro forma extension of calendar 1982 and 1983 performance would lead to these numbers for 1984:

Item	Actual 1982	Actual 1983	Pro Forma 1984
Revenue	\$1,321M	\$1,793M	\$2,432M
Net Income	124M	179M	259M
EPS	\$1.00	\$1.32	\$1.74

to adhere to the "desirable minimum" in terms of features. The company doesn't stint on the first 90% of the features that customers want, but it ignores the last 10%, which can eat up 50% of development and design costs.

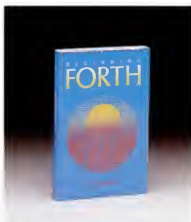
• **Strategic position:** Except for the IBM Mag Card typewriter and Displaywriter, Wang software and keyboards are familiar to more people than almost all other office systems combined. This is a tremendous springboard from which to push personal computers.

Since I believe Wang has come nowhere near saturating the market for its word-processing equipment, since I think it has the best installed-base upgrade potential next to IBM and since I think its personal computers will do well, those pro forma numbers don't scare me.

Even a more conservative quarter-by-quarter approach would put Wang's calendar 1984 earnings over \$1.60 a share. Since the market has driven the stock closer to its 52-week low than its high, I can see 1984 appreciation of about 30%. ●

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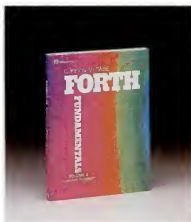


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Inside Track

A \$10 million rumor



BY JOHN C. DVORAK

Consulting Editor

It was Sunday night when a gruff-voiced man called me. "My name is Dan D. Bugger, I've got some hot news for you."

That couldn't be the guy's name, I thought to myself. "What is the news?" I asked.

"Thorn-EMI, the British entertainment conglomerate, plans to buy controlling interest in **Perfect Software** for \$10 million," he said with a chuckle.

"You're kidding!"

"Would I kid you?" He then hung up.

Who knows if it's true? Call me with the details if this guy is for real.

Did you know that Perfect Writer is derived from **Mark of the Unicorn's** Mince and Scribble programs from a few years back? How Perfect Software obtained the package and turned it into a **marketing coup** is a fascinating story that should be told to every student in the Harvard MBA program.

John Barry was recently in Germany and tells me he had heard that the experimental **Bildschirmtext** (a German teletext service) has been in testing for three years and now includes addresses of **call girls** as one of the services.

In Canada, **Bytec**, the manufacturer of the nifty **Hyperion PC-compatible** portable, merged with **Comterm**, a company that might be compared to Mohawk Data or Calcomp or any number of nonconsumer-oriented companies. Already, the marketing and PR functions of the company seem to have been **shrunk to nil**. It reminds me of the Pertec buy-out of MITS a few years back. Whatever happened to the Altair may happen to the Hyperion — we'll see.

The Hyperion should have been the popular machine that the Compaq became. Bob Mecoy, an editor at **Dell Books**, uses one and loves it. It was the first and is still the **nicest portable personal computer**. I'll be disappointed if we see less of the Hyperion rather than more. If so — then so much for Canadian business savvy.

The hot software products of 1984 will be idea organizers, personal-manipulation programs and detail-management systems. If these terms all sound new, they are. In future weeks I'll discuss idea organizers and personal-manipulation programs. Detail management is appropriate this week in light of **Warner Software's** recent acquisition of the rights to publish, market and distribute The Desk Organizer. The Desk Organizer is the kind of software package that may change a lot of peoples' minds about a computerized Rolodex. This is a superb software package that always runs a self-generated background task mode.

I haven't been able to figure out how they accomplish a kind of universal concurrency that allows this thing to work, but it seems flawless. Though it is not as pretty as the Macintosh, its automated functions are just what are needed for the disorganized.

Basically, this package continually runs in the background and when called it can act as a **calculator**, telephone dialer, appointment book (with audible alarm) and note taker. Check it out.

Captain Sticky Needs a Computer Dept. If any of you watch the TV show, "Real People," or have been following the Chicago CES shows, you know who Captain Sticky is. He bills himself as the only real **caped crusader** in the U.S.A. In reality he is an incredible showman and



The MARV needs a sponsor.

promoter from San Diego. His latest development is an outrageous vehicle named **MARV** (Mobile Attack and Reconnaissance Vehicle). This thing can **throw a pizza pie 40 feet**. It's an amazing thing to see. Sticky says it has more hydraulic gear than a 747.

Anyway, Sticky is looking for a computer company to **sponsor** a computer for the thing. He says that most large and small corporations will sponsor parts of the machine, but computer firms don't seem to understand the value of this kind of sponsorship.

MARV will be unveiled at the Chicago Consumer Electronics Show. I think it will allow the sponsor to get the **ton of free publicity** that Sticky will attract. It's probably a lot cheaper for a computer company to help out good old Sticky than it is to have a booth at the show. Call Sticky at (619) 474-3077, if you have a suggestion.

We Get letters Dept. James DeStefano sent me a note concerning my report that **Dysan** was selling software on its own 3½-inch media. He wants to point out that it is for the 3¼-inch media. Sorry. Dysan makes the flex disk used by the **Tabor-type disk drive**. When I first saw the Tabor drive over a year ago I was **impressed** by its compactness. But with **Apple** now settling in with the **Sony 3½-inch** disk drives, I'm not sure how well the 3¼-inch drives will do.

Unless IBM rolls out a product with the new media, I don't see how it can survive.

I remember when the first video recorders were out. There were some **strange formats**. I remember a salesman telling me point blank that the now defunct **Sanyo V-Cord** would be the deck to buy. Soon they were **giving them away**. There was also a Quasar deck that used a huge crate-size cassette.

Creating a standard in a marketplace that can be bought with advertising is a lot easier when you're not competing with ten other companies trying to do the same thing — especially if they have more money than you do.

Whatever the case, DeStefano sent me a copy of the draft minutes of the **ANSI X3B8 technical subcommittee** that standardized the 3¼-inch diskette over the 3½-inch designs. I'll discuss this document next week. ●

**.SORRY CHARLIE
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